NO. 13,205

RICARDO O. CABALLERO AND WIFE, ALMA LYDIA CABALLERO	:	IN THE DISTRICT COURT OF
vs.	:	DUVAL COUNTY, T E X A S
PHILIP MORRIS, INCORPORATED, ET AL	:	229TH JUDICIAL DISTRICT

DEPOSITION OF DR. GARY K. FRIEDMAN

(VOLUME III)

COPY

November 22, 1986 Houston, Texas

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I N D E X

VOLUME III

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EXHIBIT INDEX

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Q Now let me ask you: You mentioned that the tracings that were attached to this report were odd to you. Is that your testimony or --

A Well, I am not sure I used the word "odd." It's that they -- I had difficulty with them because I did not see any -- and once again, this may simply represent the copying technique, but I don't see any time indicators on here at all as to what the amount of time is that has elapsed on the chart from one spot to another, and it may simply be my copy. The second thing I thought was a little odd was that the -- there were only two patient efforts instead of three, and the third thing being that the tests appear to start from different base lines. Now, possibly the way their lab measures it that may be fine. It's just usually you like to see a .0 for every test and I am not sure that I can identify that.

Q He looks like he starts up there right around five liters for one of the tests and goes down instead of up. Right?

A Well, that may be the machine that they use, and that may be the proper way that their machine works. I am not sure. It may start at five and

then come down, but once again, then the next time they run the test it looks like they started at 3,800 and then comes down, so I have two separate curves on my sheet.

Q You only have the one sheet.

A I only have one sheet. There may be other sheets or something.

Q Okay. Now --

A Excuse me. Are there more than one sheet that I should have?

Q Well, of course, you got yours from, I guess, Mr. Watkins and you may have what I have got. I am looking at two sheets here. Let me just show you what those are and it may be the same sheet. Somebody may have copied mine twice.

A I believe that you and I have -- I don't know what we have.

MR. WATKINS: That's not the same, though. Those two you are holding down there are not the same.

A The only thing I can assume is that you have a test that starts at 3,200 and looks like it might be continued on a second page. I have a test that starts at 3,800 and then I have one that starts at five liters and goes completely

off my page. In other words, where you have the complete test here --

Q So whoever did the copying of the charts in your opinion didn't copy all of them for either one of us. Is that what you are saying?

A Correct. And that was the basis for my statement that these tests, as I received them, were not adequate for my purposes of interpretation and therefore I deleted them, because I can't say that any of these values are accurate, and based on the information either one of us have, I am not sure that we can do much more than go through and exercise --

MR. WATKINS: Is that MacDougall's?

MR. McELVEEN: That's MacDougall's, yes.

(Break.)

Q All right. Now, Doctor, if we may continue, I want to move on, if I may, to the Audie Murphy test, but I want to mention to you that we will go back and look at the x-rays, if you don't mind, after a little while.

A Certainly.

Q All right. Now, could you turn to the Audie Murphy records which you have?

A Okay.

Q And does your first page of Audie Murphy records just reflect the VA medical certificate Page No. 41 New, as it were? If you could get to that, I think that's where I am going to be starting.

A I have a medical certificate Page 41 New, yes, sir.

Q Okay. Now, preliminarily, Doctor, let me ask you this: When a patient comes into your office and you ask him certain information with regard to his history of his present illness or his family history or his complaints and so forth, is the only source of information you generally have what that patient tells you?

A Normally, although sometimes a family member is present or he will bring medical records with him, but certainly we usually have the patient's history coming from him.

Q Okay. Over the course of your practice other than faulty recollection, has it been your experience that patients generally tell you the truth?

A I believe they do, yes, sir.

Q Okay. Now, looking at this medical certificate

here, we are talking about a period of time in 1985 of April the 4th, I believe. Is that it? It may not be reflected on that first page. Mine is so poor here on the left-hand corner I can't read it, but I think that if you will look through the records that, in fact, what you will see is that this first workup was on 4-4 and he came back on 4-22 for some pulmonary function tests. Can we -- I don't know that we need to stipulate that, but I believe that I am going to ask you to assume that because I believe it's pretty apt to be true.

A Okay.

Q Now, if it was April of '85, that would be about ten months after he went to see Dr. MacDougall. Right?

A Correct.

Q He went to see Dr. MacDougall in July of '84, July 20th. He goes to see the VA in April of '85, so about nine and a half months, if it's April the 4th. And at that time the difference between these records and MacDougall's records is he appears to have aged two years. Do you see that comparing the two records? He was fifty when he went to see Dr. MacDougall and he

is fifty-two when he is at Audie Murphy. Do you see that?

A I see that, yes, sir.

Q Now, do you know what the actual birth date of this patient is?

A August 10, 1933.

Q Okay. So August 10th of '33 he would, in fact, have been fifty in July of '84, then. Right?

A Okay.

Q We agree with that. Right? We agree with each other.

A Let's see in July --

Q I am not trying to mess you up. I'm really not.

MR. WATKINS: He would be almost fifty-one apparently.

Q So he would be fifty but he certainly wouldn't be fifty-two.

A He would be almost fifty-one.

Q He would have turned fifty-one in --

MR. WATKINS: August.

Q So he would have, in fact, been fifty-one when he went to see him in April of '85. So the difference in age as you have indicated a little earlier is going to make a difference in the predicted normal values.

A That's correct.
Q All right. Now, the record that he gives them when he goes into the VA is DOE. Now, is that --
A Also if I could just respond to your last question about the predicted normals, if the VA shows him to be fifty-two years old when, in fact, he is fifty-one years old, it means that his condition is worse than had the VA measured -- You and I would agree on that.
Q Well, what are you saying? I mean what do you mean by that? Do you mean that the predicted normal goes down with age?
A Right. In other words, if they erroneously said he was fifty-two, they would have used a set of predicteds. If, in fact, he was only fifty-one, as we would both agree, his predicteds should have been higher than the VA reflected, meaning that they underestimated the severity of his illness percentagewise.
Q Okay. All right. Now, when he went to see him, and again referring to that medical certificate page, it says DOE, SOB. Now, although Mr. Watkins has indicated that that SOB term can have several meanings, can we agree that on this one those six letters mean dyspnea on exertion,

shortness of breath times one year.

A That's correct.

Q Then it says "was seen PMD," and what does PMD mean in medical jargon?

A I would assume this means private medical doctor.

Q Or perhaps personal medical doctor.

A Something like that.

Q The record that he gave Dr. MacDougall, if you will just glance back at that on July 24th or, I'm sorry, July 20, 1984, also indicates that he gave him a history of shortness of breath on exertion for the past year. Now, is shortness of breath on exertion the same as dyspnea on exertion?

A I believe so, yes, sir.

Q Okay. Dyspnea just means shortness of breath. Right?

A I would say.

Q Okay. Now, this report indicates that on 3-29 the patient started Theophylline 300 milligrams BID. Comparing that with Dr. MacDougall's record, that would be consistent with when Dr. MacDougall put him on the Slow-bid 3-29 of '85. Right? Go back and look at it if you are

not sure.

A I will accept that.

Q Okay. So they reported that he had gone on Theophylline on 3-29 and at that time they noted "Fifty-two-year-old white male stopped smoking 7-84 when started having SOB:DOE." Now, you yourself, I believe, took a record that he had stopped smoking on July 20, 1984.

A Correct.

Q Now "On Brethine and Theophylline with gradual" and does that mean "increase in SOB/DOE"?

A Right.

Q "Over recent months," and then can you read that next entry there? What does that mean?

A I'm sorry. My copy was such I couldn't make out what it is.

Q Okay. "To pillow orthopnea" is the next entry. What is orthopnea?

A That means shortness of breath when lying down.

Q Okay. And then it says "Occasional PND." What does that mean?

A Paroxysmal nocturnal dyspnea probably.

Q What is that?

A That means waking up at night short of breath.

Q Is that you wake up and you are gasping for

breath?

A It's not fully described. It means you wake up short of breath.

Q Okay. "Paroxysmal" there, does that have any particular significance? Does that mean the way you are breathing or what does that --

A No, it's PND, just means waking up at night short of breath, as I understand it.

Q Is orthopnea and paroxysmal nocturnal dyspnea consistent with cardiovascular disease?

A You can see it either with congestive heart failure or you can see it with -- Some patients with pulmonary disease have shortness of breath when they lie down, especially with emphysema.

Q Okay. Now, the next point that was made was "The PE" -- meaning physical exam, I guess -- "JVD equals 9." Is that nine centimeters?

A It appears to be.

Q Okay. What does that mean, JVD? What is JVD?

A I think it may be JVP. I am not sure. I don't know what -- you know, I am not certain on the copy.

Q Okay.

A I am not sure what JVD is. JVP means jugular venous pulse, and JVD, I am not sure. I am not

familiar with JVD.

Q Okay. If it is JVP, jugular venous pulse, what would the nine centimeters mean? Would that be a consistent reading with that?

A It would suggest that there is elevation of the jugular vein which goes along with the right-sided heart failure as you would see with cor pulmonale which would be heart failure due to lung disease.

Q The jugular vein goes to the head, doesn't it?

A That's correct.

Q Or does it come from the head?

A Well, it comes from the head down to the heart.

Q Okay. And the blood --

A Just to be accurate, it connects through the vena cava and the subclavian to the heart.

Q All right. Okay. Once blood is oxygenated in the lungs, it returns to the heart, does it not?

A That's correct.

Q And it returns to the left atrium of the heart. Right?

A That's correct.

Q It is then pumped into the left ventricle. Right?

A Correct.

Q And is pumped out of the heart into the aorta. Right?
A That's correct.
Q Do the jugular arteries which go to the head with oxygenated blood come off the aorta?
A No. I believe that you are confused.
Q Okay. Explain why I am confused.
A There are no jugular arteries. There are only jugular veins. The jugular veins come down and empty into the right side of the heart. The carotid arteries come off the aorta and go up to the head.
Q Carotid arteries come off the aorta. They go into the brain. Does the blood flow that goes into the brain from the carotid arteries come back down through the jugular veins?
A Yes.
Q Now, if the blood flow is from the aorta to the carotid arteries to the brain back to the jugular veins, why would increased jugular venous pressure have anything to do with the right side of the heart?
A Okay. I could easily demonstrate it to the jury on a blackboard, but in the absence of that, assume that you have a sink that is stopped up.

And you are pouring blood into the sink and it can't go out the drain, so it overflows and goes back up coming up over the top. Okay. Now, assume with me that the right ventricle of the heart and the right atrium are our sink and that those -- that right ventricle has to pump blood forward into the lung. And if the lung is so diseased hypothetically, as in the case of bad emphysema, that the heart can no longer pump blood forward into the lung, and assume that blood is pouring down from the head into our sink and it can't drain out into the lung, it backs up. And that's why --

Q Where does it back up to?

A It backs up into the jugular vein.

Q No, no. Where is it going to back up to before it gets to the jugular vein?

A Well, the right atrium.

Q Then where?

A The superior vena cava.

Q Okay.

A Then the jugular vein.

Q Now, the jugular vein goes north -- up. Right? So gravity is going to mainly force that blood down, isn't it?

A Under normal circumstances, but if your sink is stopped up and you keep pouring blood in, it goes up, so that's why this notation is very important in this case and the jugular vein elevation is a cardinal sign of right-sided heart failure, which you would see in cor pulmonale.

Q Okay. Well, let me back up and ask this question first: Could jugular venous distension be secondary to left-sided heart failure?

A No, and the reason is very simple. What veins -- Let's talk about the veins in the heart. What veins empty into the left side of the heart? The pulmonary veins. And when the left heart fails, the pulmonary veins become engorged. Fluid empties into the lung and then you get short of breath from heart failure. What veins empty into the right side of the heart? The vena cava and the jugular vein, and when the right side of the heart fails, what happens? Blood backs up into the vena cava, and I hate to ask an opposing attorney to trust me, but trust me. That is what happens.

Q The jugular veins come back into the vena cava. That's what you said. Right?

A That's right.
Q And the vena cava enters the heart where?
A It enters the heart at the right atrium.
Q The right atrium is where blood comes from to go to the right ventricle which goes where? To the lungs. Right?
A That's right.
Q All right. All right. Never mind. Never mind. You and I are going to dispute that for a while, but let's go on to something else.
A Counselor, it's not a matter of dispute.
Q All right. COR, the next entry down there S4, S1, S2 with S3.
A I believe that's without S3.
Q I'm sorry. You are right. Without S3, and then there is another entry there. Can you read that last entry there?
A I believe that's without a murmur.
Q Okay. Now, the S4, is that a sound that you hear on everybody's heartbeat?
A No.
Q Is it, in fact, known as gallop, isn't it?
A An atrial gallop. Right.
Q In your view, is that consistent with congestive heart failure?

A It's an atrial gallop. It is not a ventricular gallop and it's consistent, I believe, with this right-sided heart failure that we are talking about due to the lungs -- due to cor pulmonale.

Q You think this man has cor pulmonale.

A I believe on this occasion with the jugular venous elevation that he has an element of acute right-sided heart failure.

Q Well, if he has cor pulmonale in 1985, then he has it in 1986. Right?

A Not necessarily. It can be a very acute phenomena. It can -- If I may, may I rely upon a textbook with diagrams that will show this clearly, which I will intend to use in front of the jury? I think it would be a courtesy to show it to you now to explain this phenomena that we are talking about.

Q Okay.

A Sometimes I am deficient with words and I have difficulty explaining things graphically and a picture may help.

Q Let me just mention to you that for record purposes what we are going to try to do is just get -- after you have made reference to that -- marked as an exhibit to the deposition and so

forth.

A Will we be able to use a Xerox of this?

Q Well, it wouldn't come out in color, obviously, but you can, yes. I mean I think the Xerox is going to be what we are satisfied with on the record. I am not going to ask you to rip your page out of your book, no.

A Thank you.

Q Out of curiosity is this THE CIBA COLLECTION OF MEDICAL ILLUSTRATIONS, VOLUME I, RESPIRATORY SYSTEM by Frank H. Netter, M.D.? Is that Volume III or V?

A VII.

Q All right. And that's page what?

A I would like to show two pages. The first is Page 144.

Q Okay.

A And not to belabor the prior point, but in understanding the cor pulmonale, this is an illustration which I use in teaching in medical school and will demonstrate the answer to two consecutive questions which you have asked, one concerning the jugular veins and one concerning whether cor pulmonale can be there one year and gone the second.

The first example I would like to show is is Page 144 in which I will show the jury a classic case from Netter's textbook in which the title is called Chronic Obstructive Lung Disease and the subtitle is called cor pulmonale Due to Chronic Obstructive Lung Disease. And this is a diagram as I have described the heart and this is the aorta pumping blood into the lungs. The blood returns from the -- I'm sorry. This is the pulmonary artery pumping blood into the lungs. I'm sorry. And this is blood coming down into the heart from the vena cava. If the blood cannot be pumped forward by the heart into the lungs, and by the way, this is a case of emphysema and we can see large bullae and dilated alveoli in this examination of cor pulmonale. If the blood is -- If the heart is unable to pump the blood forward into the lung, then the blood will back up and it will go up the superior vena cava and down the inferior vena cava, and this is clearly the right side of the heart which is doing this.

This picture graphically demonstrates the presence of venous distension and shows a color photograph of a gentleman's head at the top of

the page in which the jugular veins are shown to be elevated and there is a little sign here that says the words "venous distension." To the gentleman's right is a moanometer showing that the pressure is increased in the jugular vein, and I believe that this probably far better illustrates the principle I was just trying to explain than my words are able to.

But once again, it clearly shows -- what I teach is the stopped up-sink-phenomena, and that is when there is severe lung disease, as emphysema, that the heart can't pump blood forward. The blood backs up and will go up into the neck and cause this jugular vein distension, and this is called cor pulmonale. Now, cor pulmonale may either be chronic or it can be acute. Now, acute cor pulmonale means that it comes on suddenly and may disappear when the cause goes away. And this can be something due to anything from bronchospasm, which worsens this pre-existing condition, suddenly throwing this man into right-sided heart failure with the S4 gallop and the elevated JVP as you and I have discussed, or it can be -- and I am not suggesting that this

latter is the cause, but use it only for illustrative purposes, and the other cause is pulmonary embolism. And pulmonary embolism can occur and throw the patient into acute cor pulmonale in which the JVP also goes up, and the point being that after an embolism goes away or after bronchial constriction goes away, that acute cor pulmonale will resolve and there may not be any subsequent evidence of it, so it may either be a chronic and persistent phenomena or it can be a sudden phenomena which resolves depending on the clinical situation that precipitated it.

Q And are you going to have another page there marked just here for record purposes re the pulmonary embolism?

A And, once again, I am not suggesting that this man had a pulmonary embolus but only to point out that cor pulmonale may be present back a year ago, and if it was due to embarrassed pulmonary function, say, secondary to bronchsopasm and if that bronchospasm was relieved, that the lungs would improve and the cor pulmonale would reside -- reside or resolve.

Q Resolve.

A And that would be the same kind of a thing that you would have with a resolving pulmonary embolus or any acute pulmonary embarrassment, so the bottom line being once it's there, it doesn't always have to be there.

Q Okay. For the record, and without taking a minute out here, we can identify pages --

MR. WATKINS: 144 while ago.

Q 144 and was it 145, too, that you had that second page?

A It's 144 is all.

Q 144 and then with regard to the potential differential of pulmonary embolism, 220 -- Well, is it this whole thing?

A Yes.

Q 226 through 229. Okay. Now, Doctor, getting back to the medical certificate, the last entry on that page appears to be -- Let me let you get your glasses on there. "Lungs clear." Is that your --

A Yes, sir.

Q Okay. Now, what is your next page? Does it look like sort of a continuation sheet of that?

A It is just some lined -- All I can say is it's got -- It's the same one that you are looking

at, and it has no date that I can see on it.

MR. WATKINS: It has a number two at the very bottom right.

Q Yes, and it says number seven and eight, continuation, space, but you are right. It is not dated. But let's just go on on that page a moment. It's got "A" and "P" at the top. Now, right on the previous page if you would glance up at the history, it also has "A" and "P" right under "S" and "O." Do you see it on the left-hand side of the page? "S, O, A, P," is that a medical notation, and if such, what do those letters mean?

A It is an abbreviation for the sequence in evaluating a patient. I believe "S" stands for symptoms. I believe "O' is for observation. "A" is for assessment and "P" is for plan. It may mean different things in different centers. This is the one that I am used to using.

Q Okay. And have you also heard the S and the O referred to as subjective and objective?

A Right.

Q Okay. The A on this second page here that we have just been talking about says "Probable COPD but need to RO," and that's rule out, I believe,

"CHF," congestive heart failure.

A Right.

Q Based on the workup that you have just looked at on Page 1, would that be your potential differentials?

A I would agree exactly with the physician that in all medical probability it is probably COPD, but certainly I think that he is wise to rule out congestive heart failure.

Q Can congestive heart failure be produced by either a failure of the left side or of the right side of the heart?

A Yes.

Q Okay. The plan here, the P part, "EKG, CXR," chest x-ray, I guess. And we can talk about what those resulted in. I am not trying to avoid talking about them. We are just talking about them sort of as we get to them. Theo-Dur, I guess, would be what? Another kind of bronchodilator?

A It's another Theophylline. It's similar to the Slo-Phyllin.

Q Would they have taken him off the Slo-bid and put him on this probably?

A Either that or he had already stopped it, one of

the two.

Q Is Theo-Dur a more potent bronchodilator than Slow-bid or do you know?

A I believe it is a little more efficacious and has longer -- I believe it's got a little longer term of action, but there is not a great deal of difference.

Q What's your general prescription for Theo-Dur here? Would you give it for thirty days or does it vary according to the patients?

A It varies according to the patient, but it's not unusual to give it for thirty days.

Q Okay. Terbutaline or I'm sorry. Well, it may be Terbutaline. Is Terbutaline, in fact, some type of drug?

A Yes.

Q What is that?

A Terbutaline is a beta 2 agonist. It's a bronchodilator.

Q So they put him on basically the two bronchodilators again working in different ways to relieve --

A Terbutaline has replaced Brethine and Theo-Dur has replaced the other Theophylline.

Q What is Alupent inhaler?

A Alupent is a bronchodilator somewhat similar to Terbutaline just slightly different.

Q They are loading him up there with bronchodilators.

A They are giving the first two by mouth and the third one is an inhaler. They are going to give him two pills plus something to breathe directly into the bronchial tubes.

Q Okay. And then the recommendation is "PFT's with Theophylline level on the same day," and we will talk about that in a minute and then there is an entry "GMC-NP." Do you know what that means?

A As a guess, general -- if it's a military hospital, it may mean general medical clinic. I have seen that referred to in VA hospitals as just the general internal medicine clinic as GMC.

Q What's about "NP"?

A New patient maybe.

Q Okay. All right. Now, let's take a look, if you will, the next thing I have is --

A I'm sorry. I don't want to interrupt you but you said we would get back to the EKG and chest x-ray findings.

Q As a matter of fact, I was going to ask you to look at the EKG next. I am really not trying to leave any stone unturned here.
A Okay.
Q Have you got the EKG in front of you there?
A I do.
Q Okay. That was done 4-4-85, I believe. Is that right?
A Yes.
Q Okay. Now, at this point in time, first of all, is this a study that is sort of familiar to you as at least initially a computer read EKG, ECG?
A Yes.
Q Okay. I am not going to ask you about some of these things, but I will ask you if you could describe, and I will ask you about these one at a time, what the abnormalities this computer read are and what in your opinion they signify. First, the unusual P axis.
A I am going to have to share with you because mine does not -- does not have --
Q Is yours sort of like this? It's got kind of a cut off top or something?
A Yes, sir.
Q Okay. For the record, the doctor's appears to

say only at the top of his page "Irregularity and otherwise normal EKG," and the other page of the electrocardiogram says a little more than that that you can read irregularity and otherwise normal EKG or ECG. Okay. Go ahead and look at that one. The first thing it says is "Unusual P axis." Now, could you tell us where on the electrocardiogram that is and what it means?

A Well, the P wave is the wave that originates in the atrium or the upper chamber of the heart, and it is a little bleb which is right before the QRS complex.

Q Okay. Now, you say it originates in the atrium. Is that the left atrium or the right atrium?

A It originates originally in the right atrium.

Q Okay. And where does it move from the right atrium? Does it move to the left atrium or to the ventricle?

A It moves into the bundles -- into the bundle of his and then down into the bundles going to the other atrium and then down into both ventricles.

Q Okay. All right. So it's the first little bleb you see on the electrocardiogram.

A That's right.

Q All right. And so it says "Unusual P axis." Now, what does that mean?
A That means the electrical axis or electrical direction of the P wave.
Q Okay.
A This is the type of abnormality that could be caused by an unusual strain on the right atrium, as in a cor pulmonale.
Q Okay. What are the other potential differentials for an unusual P axis?
A I would assume any type of a disease that would affect the right atrium --
Q Okay.
A -- could do it.
Q Okay. Now, what about "short PR"?
A That, once again, indicates a conduction change in the electrical conduction going from the right atrium down into the ventricles.
Q Okay.
A I am not sure what its significance is.
Q Okay. And then it says probable junctional rhythm with undetermined rhythm irregularity. Now, is a junctional -- I guess the ordinary rhythm of the heart is what's called the sinus rhythm. Right?

A That's correct.
Q Does probable junctional rhythm mean that this heart is beating with other than a sinus rhythm?
A It says "probable" and it would -- I am not sure I would agree with their interpretation, because there is a P wave in front of every complex indicating to me this is a sinus rhythm, but for whatever reason they are calling it, a probable junctional rhythm would indicate that the beat was originating low in the atrium or in the -- a junctional rhythm means -- Whereas a sinus rhythm definitely originates in the atrium. A junctional rhythm originates somewhere between the atrium and the ventricle but not necessarily in the pacemaker.
Q Which is where it's supposed to originate.
A That's correct.
Q Okay. Now, is the pacemaker of the heart, is that the sinus node?
A Yes.
Q Okay. And where is it located?
A Right atrium.
Q Okay. So of those findings, is the unusual P axis the finding that you would say would be most consistent with cor pulmonale or some other

deficiency of the right atrium?

A That and the junctional rhythm. You can develop all type of arrhythmias with cor pulmonale.

Q Okay. Now let me turn next, if I can, to the chest x-ray reading. Have you got that there somewhere?

A I have one of April 8, 1985.

Q Okay. Now, I believe that that was transcribed on the 8th but it was taken on the 4th. Is that what your record shows?

A That's correct. Okay.

Q Dr. M. E. Glenn, do you know Dr. Glenn by any chance?

A No, I don't.

Q In reading these records throughout, I am sure that you have glanced at the names of the various physicians who have worked this patient up in one way or another. Have you known any of them personally?

A Other than the physicians associated with my clinic, no.

Q Okay. The exam requested was a chest x-ray, CXR, persistent -- Wait a minute -- per clinical history and, again, whoever wrote that part of it was saying shortness of breath, chronic

obstructive pulmonary disease versus congestive heart failure question mark. Is that right?

A That's correct.

Q The first notation there, aside from this, was on a chest x-ray they had to look at is that "There are extensive pulmonary interstitial fibrotic changes with parenchymal obstruction in the upper lobes." Do you read that to mean that to mean that there are interstitial --

A Excuse me.

Q Go ahead.

A I apologize.

Q You looked at x-rays on this patient that you took in '86, didn't you?

A I did.

Q And did you review the earlier x-rays, too?

A I reviewed them quite some time ago but I don't recall what they showed. I have brought them today and would feel more comfortable looking at them freshly.

Q We will get to those in just a few minutes, but when you looked at the x-rays, you don't recollect seeing any pulmonary fibrosis in the upper lobes of this man's lungs, do you?

A To the best of my recollection, I don't. I

don't recall seeing any fibrosis in the upper lobes, no.

Q Okay. You did see parenchymal obstruction in the upper lobes, didn't you?

A I did, and when I read this, I felt like what they were saying is there were pulmonary interstitial fibrotic change and that there was parenchymal obstruction in the upper lobes. I didn't definitely interpret this as being a fibrotic change in the upper lobe.

Q Okay. And that, in fact, would be consistent with what everybody has read it to be and that is that there is very little in the upper lobes except maybe some bullae and in the lower lobes there are some changes which some people have called interstitial fibrosis and others have called atelectasis and so forth. Right?

A Correct.

Q And as a matter of fact, this fellow says that the bronchovascular markings are crowded inferiorly, which means in the lower lung zones. Right?

A Correct. I think I had raised that issue in my report or at least in the discussion of it.

Q Okay. The comment that he talks about the

findings being consistent with COPD, predominantly emphysematous and then mentions lack of overall hyperexpansion and prominence of small pulmonary veins raises possibility of early cardiogenic failure. Now, what does cardiogenic failure mean? Is that the same thing as congestive heart failure?

A That's correct.

Q Okay. And he notes that there is hyperexpansion of the upper lobes, but do you read that report to say that he does not believe that the whole lungs are hyperexpanded, just the upper lobes?

A That's the way it reads, yes, sir.

Q Okay. Do you agree with that?

A I would have to look at his particular x-rays to comment. Without reviewing them specifically, I can't comment.

Q Okay. And finally, if you will, for the '85 workup let's take a look at the pulmonary function studies. Do you ever see patients who have been worked up at the Audie Murphy pulmonary function labs?

A I have seen one or two in the past, yes.

Q Do you believe that the Audie Murphy labs are good quality pulmonary function labs? Do you

have any reason to doubt that they are?

A No, I do not.

Q Now, we talked a little bit ago about the various variables that are considered in predicted normal lung values.

A Right.

Q This particular patient is measured at Audie Murphy to be sixty-nine inches tall.

A Right.

Q Which is an inch and a half more than he was down at Dr. MacDougall's place. What would the effect of the difference in height have on the predicted normal value of a patient?

A At the Audie Murphy lab the predicted of sixty-nine inches over 67.5 would make for a somewhat larger predicted, which may be offset by the fact that he is being counted as age fifty-two. However, once again, and I am not -- I don't want to pick on Dr. MacDougall. I don't know him. And I wouldn't pick on him if I did, but we measured without having seen -- as the records reflect we never had seen these records prior to my examination, and we measured this man at sixty-nine inches in height at the Texas Lung Institute lab.

Q You actually measured him at Hermann Hospital as sixty-eight inches, didn't you?
A Well, I'm sorry. This is the record from Corpus where he was seen by Dr. VanCampen in our laboratory down there and was measured at sixty-nine. And I would have to check and see if at Hermann he was sixty-eight but --
Q We will get to that. We will get to that. Okay. All right. So basically you are saying that there is a little bit of offset here both ways and so it may cancel each other out. Is that what you are saying?
A That's correct.
Q Okay. Now, at this place, the Audie Murphy pulmonary function lab, they measured two things here or at least put two values down; the temperature, I guess, in the room where they did this and the barometric pressure. Do you see that up on the right-hand side there? Temperature was twenty-five degrees centigrade and the pressure was 732 millimeters of mercury. Do you see that up there at the top right-hand side?
A I will --
Q We are looking at different pages here. Again,

let me show you this one, because you may not have that one.

A Okay. Thank you.

Q Sure. As a matter of fact, the one you were looking at is the one right down next to it but you see that up there on the right-hand side.

A Yes, I do.

Q Okay. Why in your view would those two items be recorded?

A Very often the standards or the predicteds are adjusted for barometric pressure and for temperature in the laboratory.

Q Okay. I'm sorry. The standards -- the --

A Predictions.

Q The predicted normals are adjusted to those two factors, temperature and pressure. It's been a real long time since I had chemistry. I hated it when I had it. Could you tell me, please, what effect rising temperature and rising pressure have on volumes in the lung?

A Volumes will increase with temperature and decrease with pressure.

Q With the increasing pressure?

A With the increasing pressure, right.

Q Okay. That's some of those gas laws I never

learned. All right. Now, they did both pre and postbronchodilator studies here, I guess. He did not improve, I believe you will agree with me, on postbronchodilator. Is that your interpretation of these?

A (Nodding affirmatively.)

MR. WATKINS: You have to answer.

A I'm sorry. Correct.

Q Now, the prebronchodilator forced vital capacity was the highest of the two trials, I guess they gave him here, at 3.91 liters. Right?

A That's correct.

Q Now, I know what you have said about Dr. MacDougall's testing, but you will agree with me that that is a lot higher than Dr. MacDougall's vital capacity reading. Isn't it?

A Yes, sir.

Q Okay. And as a matter of fact, it's almost a full liter higher than his static vital capacity. Right?

A That's correct.

Q Now, in addition to that, the FEV1 of 1.41 they got at Audie Murphy here is about 230 milliliters -- 220 milliliters, I guess, higher

than Dr. MacDougall's. Right?

A I believe so.

Q Okay. And that would be in your opinion outside the range of test-retest reliability. Right?

A Once again, I have tended to -- For all these factors I have tended to discount Dr. MacDougall's testing.

Q I understand that. But my question was that's outside the range of test-retest reliability assuming Dr. MacDougall's is a valid test.

A That's right.

Q And the test-retest reliability on your spirometer is what? About a hundred milliliters?

A It's three percent of whatever -- It's within three percent of whatever the value is.

Q Okay. Now, the question that I have for you on that is that they loaded him up, you will agree with me, I think, on the 4th of April of 1985 with bronchodilators at his first visit to Audie Murphy. Will you agree with me that they loaded him up?

A Well, they gave him the proper medication.

Q Okay. Which consisted of two pills and an inhaler. Right?

A Right.
Q Eighteen days later, which is the date of these pulmonary function tests, is it possible in your view that those bronchodilators could have caused the kind of change in his pulmonary function that you see between Dr. MacDougall's tests and the Audie Murphy test?
A In the interest of time, do you have Dr. MacDougall's readily handy?
Q Sure.
A Thank you. The answer is definitely not.
Q Okay. And why would that be?
A First, without being repetitive, I believe we have pointed out many deficiencies in the manner in which Dr. MacDougall's test was performed, which makes me believe it to be not accurate.
Q Yes.
A Number two is let's assume that we wanted to take the position it was accurate. It was an accurate test.
Q Okay. Assume for a moment that it was accurate.
A Let's pretend it was accurate.
Q All right.
A What is the probability of the patient improving from July 20, 1984, through April 22, 1985, in a

consistent fashion? First let's look at the vital capacity. The vital capacity for Dr. MacDougall was 3.0 on static and 2.38 on forced vital capacity.

Q Yes.

A So let's just compare forced vital capacity and forced vital capacity. Forced vital capacity for MacDougall was 2.38, and to make it easier, if you want to look with me --

Q Okay.

A And forced vital capacity here.

Q At Audie Murphy is --

A Is 3.91 which is almost a -- Well, it's better than a fifty percent improvement, which it would be highly unusual, especially in view of the fact that I don't remember Dr. MacDougall reporting this patient in severe distress or any unusual acute process on July 20, 1984. He was pretty stable when these were taken.

Q Now, just as a quick interjection, there is no indication -- Well, is there any indication he was in acute distress on the 22nd of April, '85?

A No, but the point being that if he was in bad shape here, it would not be outside the realm of possibility but not probable that he would go

from being in bad shape to good shape.

Q You mean from '84 to '85. I mean for the record purposes you have to kind of keep identifying -- I'm sorry about that but you really do -- what you are talking about. Okay? Go ahead.

A That's right. So first of all, the change from 2.38 to 3.91 of forced vital capacity between July 20, 1984, and April 22, 1985, while possible, is not probable in view of the clinical statistics given. Now, let's look at the FEV1. MacDougall recorded it as 1.19 in July of '84 and Audie Murphy recorded it as 1.41 in 1985. Now, although that is a slight change it is -- and it is within the realm of possibility, I wouldn't -- but if you look at the change in FEV1, it is only a --

Q 220 milliliters?

A 220 MLCC change in flow and we are experiencing a 1600 cc roughly change in volume. So the change in volume is so far out of proportion to the flow, and if we remember that the bronchodilators are going to affect the flow, they are not a volume drug. They are a flow drug, and although a side effect may be improved volumes, in order to attribute it to

bronchodilators or, quote, loading him up with medicine, I would want to see a better improvement in flow. Now, finally and I think the most damning evidence is let's look at the MMEF. In MacDougall's study July, 1984, this man had an MMEF of 0.65 liters. Okay. Which is nineteen percent of predicted. Now, if we look in 1985 we find an MMEF of 0.48 liters.

Q Well, yes, but I mean you would agree with me you have to take the best value of the pulmonary function values and he had a .55.

A Okay. I will accept the .55.

Q Okay.

A But my point being that I can -- if I look at that value between July 20, 1984, at 0.65 and April 22, 1985, at .55, there has actually been a worsening in his flow in that year interval as measured by midflows. My point being that if we wanted to attribute any improvement to bronchodilators, there should be an improvement in flow studies. The MMEF actually deteriorated during that year. The FEV1's showed marginal increase and the only thing that changed was the forced vital capacity.

And once again, I believe that we have

successfully shown without ever looking at this comparison that Dr. MacDougall's study is of technical quality which is questionable. This certainly could not be relied upon to say there is either improvement or worsening due to therapy in an attempt to compare these values because of these inconsistencies.

Q Now, MacDougall's mid-expiratory flow rate is the rate of flow in the middle half of the curve.

A That's correct.

Q And it is from the beginning of the curve to the end of the curve. Right? And not from the beginning of FEV1 to FEV1.

A It's the whole curve.

Q Right. Now, you have seen that value reduced in an otherwise asymptomatic patient, haven't you? Not this guy, but in others.

A It can be slightly reduced but not down to fourteen percent of predicted.

Q I understand. But the reason for the ability to see the MMEF reduced in somebody who really doesn't have very severe lung disease is because the MMEF mainly measures small airway obstruction, doesn't it?

A That's correct.

Q Okay. Now, is it possible that these bronchodilators are dilating his larger bronchi and not his smaller bronchioles, the small airways?

A Well, the answer, once again, being that I believe that it's still a measurement of flow and I would expect because the effect of the large airway is reflected throughout the curve, really, that you would not see a worsening in MMEF. The flows -- If there is an improvement in flow, all the flows should improve, maybe not proportionately, but I would not expect some to actually get worse and others to get better. And this suspicion is even further strengthened by the issues I raised in the performance of Dr. MacDougall's test. I just don't think it can be used as a standard of comparison.

(Break.)

Q Doctor, let me refer you back very briefly to that pulmonary function study that was done at Audie Murphy, and I think I am going to need to show you my page because I don't think your page has the blood gases on it. Now, Doctor, the person that did those blood gases, and let me

ask you, first of all, to define the blood gases for us. What are blood gases?

A They are, briefly, measurements of the oxygen, carbon dioxide and Ph content of the blood.

Q Okay. And how are they measured? In other words, what's the unit of measurement?

A They are measured in partial pressures, partial pressure of oxygen, carbon dioxide and hydrogenide.

Q And the partial pressures are measured in milligrams of mercury.

A Usually, yes.

Q All right. Now, there are, I guess, predicted normal values for those as well.

A It's actually millimeters of mercury, I believe.

Q Right. Millimeters of mercury. Now, there are also predicted normal values for those and what in your laboratory or what do you consider essentially the range of normal for pulmonary oxygen pressure?

A About ninety.

Q Okay. And is there a range of variation around that ninety? Is it like from eighty-five to one hundred?

A Yes, it would vary. It depends, in part, on the

patient's age. For a fifty-two-year-old man, without looking at the chart, I would think that normal would be somewhere around eighty-eight, probably eighty-five, eighty-eight, something like that.

Q Okay. And --

A As the lower limit.

Q Right. I understand. And what does that mean? I mean what does that value mean? Does that mean that there is that much oxygen in the blood or --

A That's the actual pressure that oxygen contributes to the gases in the blood is that many millimeters of mercury pressure.

Q Okay.

A And it's the measurement of the amount of oxygen.

Q So that this eighty-five or eighty-eight, say, to one hundred millimeters of mercury worth of oxygen in the blood would mean that the blood is carrying approximately the amount of oxygen it should be to oxygenate the tissues. Right?

A That's correct.

Q Okay. What about carbon dioxide?

A Forty.

Q Is there a range of variation around that?
A No. Forty plus or minus two.
Q Okay. And that is the amount of carbon dioxide that the blood is carrying as far as its partial pressure.
A That's right.
Q The Ph of the blood is how acid or how basic it is.
A That's correct.
Q Okay. And what's the average range of that?
A 740 is pretty normal plus or minus two.
Q Okay. Now, in the case of Mr. Caballero at Audie Murphy, they got a partial pressure of oxygen of fifty-three. Is that right?
A That's correct.
Q Now, you mentioned that fifty partial pressure of oxygen is respiratory failure, did you not?
A That's correct.
Q In light of his pulmonary function test values that were reported at Audie Murphy, does that fifty-three seem unusually low to you? Do you think that test was done wrong?
A Not necessarily. With the FEV1 down at forty-one percent of predicted, which would, I believe, qualify him for disability and with an

MMEF which is down at fourteen percent of predicted, and many of these values are down to fourteen, twelve, sixteen, twenty percent, meaning that he has lost eighty to ninety percent of his lung function, I am not surprised by a CO2 that low. But then again, I wouldn't be surprised if it was up in the sixties or low seventies either. It just can depend but certainly that's not out of proportion to the severity of this man's lung disease.

Q Do you believe that the lung disease that's shown on those pulmonary function tests is essentially all caused by his emphysema?

A In order to answer that, I need to inquire if there is another page with diffusing capacity on it.

Q Let me represent to you, Doctor, that we have not found that a diffusing capacity test was done at Audie Murphy.

A The opinion I have is that the majority of the abnormality represented here is due to emphysema. The only reservation I have has nothing to do with the pulmonary function test but to do with the fibrosis which I see on x-ray, which I, once again, am willing to

concede may or may not be related to emphysema from the standpoint that I can't exclude some impression of the markings in the lower lung. The reason I -- Now if I may explain to you my reason for thinking that so much of this is due to emphysema and not due to any other superimposed restrictive defect is that the total lung capacity is 122 percent of predicted, and even if you assume that a normal lung capacity is up to 115 or even by a stretch of the imagination 120 percent of predicted, at 122 percent of predicted this shows significant hyperinflation with no evidence of any superimposed restrictive defect, so that if the vital -- if the total lung capacity was, say, ninety percent of predicted, that would be lower than a hundred percent but still within normal limits and I could say, well, there is emphysema hyperinflating it with a significant restrictive defect bringing it back down to normal limits, and therefore I can't say all this is due to emphysema. At 122 percent of predicted, it means either, A, that the emphysema is so severe that even with superimposed restriction it's still hyperinflated at 122 or, B, that the

restriction really doesn't play any significant role and that the emphysema by itself still is capable of hyperinflation. In addition, if you look at the residual volume, it's 206 percent of predicted at 4.48, which also certainly speaks far more to an emphysematous hyperinflated defect than it speaks to superimposed restriction.

Q So is it your opinion with a reasonable degree of medical certainty based on what you have just said that emphysema is essentially the only contributory factor to the lung function test results?

A I believe it is the predominant -- Once again, I cannot exclude any other minor contributing factor, but by far and away, possibly best stated, those pulmonary functions are compatible with a diagnosis of emphysema without interjecting any other factor. The only thing that prejudices me toward including another factor would be the x-ray.

Q Okay. And we will look at those just shortly, but let me ask you one final question, and I think you can make reference to your sheet for this value. Okay. Well, I'm sorry that does

not list both trials, so I am going to have to show you this sheet again.

A Certainly.

Q Is the best respiratory capacity that that man had 2.65 liters?

A Yes, sir, it is.

Q And can you tell from referring to your other page there, the consultation sheet, that the lung volumes were done by plethysmography?

A Yes.

MR. WATKINS: For the record is this Audie Murphy?

Q Right. And the plethysmography means those were measured values as opposed to calculated values.

A I believe so.

Q Plethysmograph being a body box, as it were. Is that right?

A That's correct.

Q Okay. Is that the preferred method for obtaining values like total lung capacity and so forth in the sense that it's measured rather than calculated in some other way?

A I believe it is.

Q Okay. Is that what you --

A Assuming that we use a body box at our hospital.

The only qualification being that the box is well calibrated.

Q Okay. Do you have any reason to doubt the calibration of the Audie Murphy plethysmograph?

A At this time, no.

Q Okay.

A Also just let the record reflect that I do not have and have not seen the Audie Murphy pulmonary functions which you have shown me prior to this time, so I really haven't studied them in depth, and I would appreciate it if Mr. Watkins or someone can get those for us.

MR. WATKINS: Well, I have noticed here today that they seem to have certain entries in more than one of these records that I don't have. And I don't know how that came about. The reporter in putting together the copies that they sent me may have left out some entries, and what I sent you was just a reproduction from the depositions that the reporter picked up of these various records.

Q Doctor, do you have a normal value in your office for therapeutic levels of Theophylline in the blood?

A We have a range.
Q What is that range?
A Ten to twenty.
Q Okay. Ten to twenty and what's the unit of measurement?
A It's a milligram percent is what we use, I believe.
Q Okay.
A That's per hundred cc's.
Q Okay. So that's per -- Okay. Let me show you this Theophylline level which was obtained, I will represent to you, at Audie Murphy, 6.5, and I believe that's measured in slightly different terms than yours, but it comes out the same way, I think, doesn't it? That's micrograms per milliliter.
A I believe so.
Q Okay. And --
A And it does exactly, and I notice their normals, though, are five to twenty.
Q I understand that. Their normals are five to twenty and they have a 6.5 level. Their normal of five to twenty would correspond to your normal of ten to twenty.
A That's correct.

Q Okay. Now, Doctor, are you familiar with a publication called the AMERICAN REVIEW OF RESPIRATORY DISEASE?
A Yes, I am.
Q Do you subscribe to it?
A I do.
Q Do you try to read it every month to the extent that you can?
A I make an attempt to, but I don't have time to always read every article.
Q Are you familiar with a particular segment periodically that appears in there called "State Of The Art" articles?
A Yes.
Q And what are "State Of The Art" articles in the AMERICAN REVIEW OF RESPIRATORY DISEASE?
A They usually represent a current summary of our knowledge at that point in time.
Q Okay. And they are done by people who are well-known in the area of a particular subject.
A I would assume so. Sometimes I haven't heard of the author, but --
Q You don't have any reason to doubt that the "State Of The Art" articles in the AMERICAN REVIEW OF RESPIRATORY DISEASE do not represent the

current level of understanding on particular topics, do you?

A It depends on whether I read them and critically analyze them. Usually they are certainly a good place to start.

Q Okay. And the AMERICAN REVIEW OF RESPIRATORY DISEASE is published by who?

A The American Thoracic Society.

Q What is the American Thoracic Society?

A It's a branch of the American Lung Association.

Q The medical side of it.

A Yes, sir.

Q So the American Thoracic Society is all doctors. Right?

A Yes, sir.

Q And is the AMERICAN REVIEW OF RESPIRATORY DISEASE a pure review journal to your knowledge?

A Yes.

Q And what does that mean?

A It means this has an editorial board of physicians who analyze the articles prior to their publication usually.

Q And those doctors that are on that advisory board are pretty well-known in the field, are they not?

A Yes, they are.
Q Okay. Now, the AMERICAN REVIEW OF RESPIRATORY DESEASE --
A As a matter of fact, just for the record, this is the same article in which I previously -- I'm sorry -- the same journal from which I quoted the American Thoracic Society's recommendations on smoking.
Q Right. I believe the record will reflect that. The AMERICAN REVIEW OF RESPIRATORY DISEASE in 1985 published a report of a National Heart, Lung & Blood Institute workshop on the definition of emphysema. Let me show you that article and ask you if you have read that or are familiar with it at all.
A I have not read this article.
Q Okay. Are you familiar with the authors of the article?
A No, I am not.
Q Okay. Do you know what the National Heart, Lung & Blood Institute is?
A Yes.
Q What is that?
A It's part of the National Institute of Health, I believe, NIH, one of the branches.

Q Okay.
A May I look at this or --
Q Sure. But I mean I could ask you a question about it and then let you look at it before you answer. You and I may have a difference about what we are talking about.

MR. GUTIERREZ: Do you want me to make copies of that?

MR. McELVEEN: If you wish. I will ask him one question from it. If he disagrees, you may want to mark it. I don't know.

Q In any event, let me represent to you, Doctor, that this was a meeting of individuals who got together to discuss what the definition of emphysema would be, which is why the title of the article is "The Definition of Emphysema." This is the definition they arrived at, and I am going to ask you if you agree or disagree with the definition. Okay. So my question is: Do you agree or disagree with this definition of emphysema? "Emphysema is defined as a condition of the lung characterized by abnormal permanent enlargement of air spaces distal to the terminal bronchiole accompanied by the obstruction of

their walls and without obvious fibrosis."

A I would concur with that.

Q Okay. Now, we have talked about terminal bronchioles and so forth.

A Let me qualify, I would concur that that is a pathologic diagnosis of emphysema.

Q Right. I am not trying to -- Okay. Fine. We will stop there. In light of that, would you agree with me that if this patient, Mr. Caballero, has fibrosis in his lungs it is not caused by emphysema?

A I would concur with that.

Q All right. Would you agree with me that if Mr. Caballero has interstitial fibrosis in his lungs, it is not caused by cigarette smoking?

A I would agree with that.

Q Okay. Let me direct your attention, then, if I may, to the x-rays for a minute. Now, what I would like to do is ask you to look at them serially with me. I presume that we would need to go back to some other place in your office where there is a view box. The reporter can go and anybody else who wants to can, I guess, but it's a pretty small area, I suspect, isn't it?

A It is, but if you will give me a moment, I can

probably take a view box out of a different room and bring it out here for everybody's convenience.

Q Have you got any dual view boxes, because I would like you to look at them at the same time, if you understand?

(Break.)

Q Doctor, at my request you have put two chest x-rays, posterior anterior views, up on the view box, and first of all, for record purposes, the posterior anterior view or the PA view is just the view through the person's chest looking back to front. Is that right?

A That's correct.

Q Okay. There is also a type of view which you may be referring to in your testimony called the lateral view, and that is taken with a patient sideways with the view being taken sideways through the body. Is that right?

A That's correct.

Q Doctor, when one has a chest x-ray up on the view box and the heart -- as we are looking at the view box, the heart appears to be off to your right or at least the larger part of the heart appears off to our right and it's this

large white triangular area in the bottom of the chest film, I guess. Which lung is on our right just behind the heart there?

A That's the left lung.

Q All right. So the left lung is to our right and the right lung is to our left.

A That's correct.

Q Okay. Now, that's on posterior anterior views, I guess.

A That's correct.

Q And, Doctor, what two films do you have up there at the moment? The one on the left is what?

A For viewing purposes we have a film marked "X-ray Department, Alice P. Andrews Hospital, July 20, 1984."

Q Okay. And then on the right view box what do you have?

A We have the film performed at the time of my original visit dated February 10, 1986, called Frostwood X-ray Suite 309.

Q Doctor, for continuity purposes, could you put up instead of that one right at the moment the 1985 chest x-ray from Audie Murphy and then we will move on to yours? You can leave that out because we will be looking at it.

A I hate to get everything mixed up. I just don't want to lose it. There is something on the outside of this envelope that says Audie Murphy, so here is an x-ray dated April 4, 1985 --

MR. WATKINS: That would be it.

A -- which is a lateral view and I believe that this is -- Well, it says Antonio, Texas. It is not identified either by date, but it states Audie Murphy. I'm sorry. It says Ricardo Caballero and a Social Security number. There is no date nor hospital of identification. It was a --

MR. WATKINS: I thought you read the date.

A No, sir. There was an April 4, '85, x-ray which was a lateral view which accompanies this x-ray.

Q Doctor, let me hand you an envelope that our Audie Murphy x-rays came in and see if that appears to you to be the same x-ray. Ours, I might say, is a copy but --

A Yes, sir. This would appear to be -- at least once again, it says Antonio, Texas, and the same patient identification number. This one also -- Actually I may have overlooked a date. This one does have a date of April 4, '85, punched up in

that right scapula there.

Q Okay. I want you to assume, then, for purposes of the rest of your discussion that that's the Audie Murphy x-ray. Now, Doctor, first of all, could you count the ribs on this patient in the '84 x-ray for us?

A Roughly eight ribs anteriorly.

Q And would you count the ribs in the '85 x-ray?

A Seven and a half anteriorly.

Q Okay. Now, Doctor, what features in the '84 x-ray do you see which are consistent with pulmonary emphysema?

A Well, the lungs appear somewhat hyperinflated from the standpoint that there is a flaring out of the lateral chest walls. The diaphragms are slightly depressed. The heart is small and is vertical. There is no enlargement of the heart. There is opacity of vascular markings and lung markings in the upper portion of both lungs. Examining the x-ray under a bright light, one also continues to see a near absence of lung markings in both upper lung zones, and I would say that the x-ray is definitely compatible with a diagnosis of emphysema.

Q How would you rate the quality of that x-ray?

A It's fair.
Q Okay. Do you see any bullae in the '84 x-ray?
A No. I can only say that I don't see any markings at all in the apices of both lungs which may indicate the presence of bullae.
Q Okay. Now, how long ago did you first look at the '84 and '85 chest films would you say?
A Several weeks ago.
Q Okay. Was this before you looked at the records in the case?
A I got them I think about the same time.
Q Okay. Looking at the '85 chest x-ray, what are the radiological signs consistent with the emphysema diagnosis?
A Once again, there is a real darkness or opacity of lung markings in both apices. Now, on this x-ray I believe that the left appears somewhat darker or more vacant than the right. Otherwise on the PA view alone I don't see any other findings that I would attribute to emphysema other than the difference in the lung markings in the upper part of the lungs and the lower part.
Q Okay. Does the '85 x-ray have findings on the lower part of the chest x-ray which would be

consistent in any way with congestive heart failure?

A I don't believe so, no, sir.

Q Okay. Does it have any findings that would be consistent with a finding of pulmonary fibrosis?

A Yes, it does.

Q And could you in general terms sort of mention what those are?

A Well, there are numerous white lines or scars in the lower part of the right lung. I definitely do not think this looks like just a failure, but it certainly has the appearance of interstitial fibrosis.

Q Okay. Doctor, in the area in which Mr. Caballero lives in South Texas, there are a couple of fungal diseases, are there not, that are pretty endemic being coccidioidomycosis and the other being histoplasmosis? Do you agree with that?

A I know there is histo in that area. I am not aware that there is much coccidio in that part of South Texas.

Q Is there anything in these chest x-rays that is consistent with histoplasmosis of the lung?

A No, I don't believe this looks like

histoplasmosis.

Q Okay. What would you expect to see, just out of curiosity?

A I would see far more in the way of round calcified granulomas than you see in this x-ray. There is more of a distinct picture sometimes and will almost look like B B's in the lungs, little round calcified granulomas.

Q Are there any round calcified granulomas in the lung in this picture in 1985?

A Yes, sir, there are a few, but there are a few calcified granulomas in the '84 x-ray, as well, but there are some calcified granulomas noted on this film.

Q To what do you attribute those?

A They may be due to some old fungal infections, but if I look at the same x-ray under bright light examination specifically looking for calcified granulomas, I believe that some were present the preceding year as well. I don't believe that the fibrosis is due to a fungal infection, at least it's not what I have seen with fungus infections. I also don't think it's due to emphysema.

Q Okay. The granulomas, though, the old calcified

granulomas, if it were an old fungal infection in the lungs, you would expect to see some in '84 and some in '85 and they wouldn't have changed much. Right? That would be consistent with an old fungal infection that had since healed. Right?

A That's correct.

Q Okay. Can fungal infections in the lung cause pulmonary dysfunction?

A Certainly.

Q Okay. Let me ask you to take a look at the '86 chest film that your office did. And leave the '85 up there, why don't you, on the left side now and we will move on to '86.

A I am just trying to keep housekeeping here. I don't want to lose these.

Q I understand. Doctor, first before I ask you about the '86 chest x-ray, could you tell me if you see any bullae on the '85 film?

A Once again, there are markedly decreased markings in the upper lobes both left and right. On the '85 film the left has an appearance of probable bullous formation on the left in this x-ray.

Q Okay. We have got some little green stickers.

Could you put a sticker over the -- Gosh! I don't know exactly how to do this and keep us a copy.

(Discussion off the record.)

(Friedman Exhibit No. 7 was marked for identification,)

Q Doctor, for the record we are marking as Friedman Deposition Exhibit 7 the Audie Murphy April 4, 1985, PA chest film. And I will ask you, if you would, to take the little green markers and a black pen here, and first of all, put on the little calcified granulomas you identified, next to them, if you would, put the little markers. And just kind of point a little arrow and call the first one "A" or shall we call them all "G" for granuloma? Well, you have got "G" for granuloma. Are there any others you see right offhand?

A If we do that, we will have little green things all over there.

Q Okay. So there are quite a few.

A Yes.

Q Okay. But those are examples, the two which you marked with that G.

A That's correct.

Q Now, would you put a little green one next to any bullae you see in the upper lobes and mark a "B" on that with a little arrow?

A I will put a "B" with a question mark on the right.

Q And you see only one bulla on the left.

A Yes.

Q Okay. And would you just mark this one also?

A The same thing?

Q Yes. And, Doctor, again, for the record in your opinion are the granulomas in all likelihood caused by some type of fungal disease?

A In all probability.

Q Okay. They are not caused by emphysema.

A That's correct.

Q And they are not caused by cigarette smoking.

A That's correct.

Q Okay. Now, looking at the 1986 chest x-ray, and we will mark that one Friedman Deposition Exhibit 8.

(Friedman Exhibit No. 8 was marked for identification.)

Q I might say that we have not marked the '84 chest x-ray which we talked about as an exhibit because the doctor made some findings, but there

was nothing that we were asking him to mark on it. Could you count the ribs on that one, first of all?

A Seven.

Q Seven ribs, and does the number of ribs which are visible on the x-ray indicate the extent of the expansion of the lung?

A Yes.

Q Okay. Now, is there any sort of quantification about how much lung volume is represented by a rib, as it were, or we just can't say.

A The farther down the ribs it is, the greater the level of inspiration.

Q Okay. So the deeper breath he took, the more ribs you would be able to count.

A Right.

Q On a normal patient of fifty years of age, how many ribs could you count or is there any way to guesstimate that?

A That depends on the height and weight of the patient. If the patient has gained weight, we might have less ribs showing one year than another because the diaphragm elevates, not because of his lungs being better or worse, but because of other factors, so it varies.

Q Okay. Do you think that any of Ricardo Caballero's lack of lung volume is due to the weight he gained between '84 and '85, because I think you have noted he gained some fifteen or twenty pounds?

A If he gained that much weight -- Let the record reflect that we are away from my notes, but if he gained -- if they reflect he gained fifteen to twenty pounds, then that would certainly explain the rise in the diaphragm.

Q Okay. Now, on the '86 chest x-ray do you see anything that you would call probable interstitial fibrosis in the lower lung lobes?

A I do.

Q All right, sir. And that is again sort of pretty diffuse. It would be difficult to mark it with a little marker.

A That's correct.

Q All right. Do you see any bullae in the upper lobes?

A Once again, there is opacity of lung markings, which is the finding you see with bullae, and let the jury understand that a bullae is just a hole where there is not much lung tissue, and looking at these x-rays under bright light

examination, if we look at what I consider to be a normal area of lung, which would be somewhere in the middle of the lungs --

Q You are pointing to the middle of the right lung now.

A That's correct, or the middle of the left. It's fairly normal. Sort of the lower part is fibrotic, but when we get to the upper part, we see it's very dark and I believe that there may be bullae both in the right and left upper lobes.

Q Okay. Could you mark what you think are the probable bullae in the right and left upper lobes with the little green stickers and call them "B"? What I was doing was to reach in here to ask if on my copy of the '86 you could also mark this for my purposes. All right, sir. And I am going to just mark mine Friedman Deposition Exhibit 8. Dr. Friedman, putting your '86 x-ray back up on the board for just a minute, do you see any granulomas on the '86 x-ray?

A Oh, there may be a very few in the same area as before. They are not quite as apparent on this x-ray as they are on the Audie Murphy x-ray, I believe.

Q Do you think, Dr. Friedman, that the interstitial fibrosis between '85 and '86 has increased?
A No. I would say that it's about --
Q About the same?
A About the same.
Q Okay. All right. Doctor, let me ask you this question: Are bullae in the lungs such that only the larger ones are apt to be visualized on x-ray?
A No. I think you can have small bullae or have just what we call hyperlucency, meaning that the lungs appear darker than they ought to due to the increased air and not be able to see the actual walls of the bullae, and I believe in this case that that is what we are seeing on x-ray is just that I believe these represent empty sacks with little or no blood vessels or bronchial tubes going through them which represent bullae, but without really seeing specific walls to the bullae, except I believe this may represent the wall of a bulla on the left lung seen in the left third inner space.
Q Okay. Now, is that a different bulla than the one you have marked?

A No. It may be part of the same thing just because there is a large radiolucency in both upper lungs.

Q So is it your opinion that the bullae that are there in all likelihood occupy the vast majority of the upper lobes looking now at your film?

A Looking under bright light examination, I believe that they occupy a considerable portion of the upper lobes.

Q Okay. Would this in all likelihood represent one large bulla or several smaller bullae that have sort of consolidated in parts?

A I would think that it would represent several smaller, from the standpoint that you can't see some fibrous tissue in that area. I believe that there maybe several bullae, but to me it just looks like the upper part of an emphysematous lung.

Q Okay. Are you of the opinion that this patient in all likelihood has bullous emphysema?

A I believe he has emphysema and I believe that there are probably bullae present in all probability, yes.

Q Okay. I take it, then, that the answer to the question does he have bullous emphysema is yes?

A I believe so, yes.
Q Okay. Thank you. Now, one final question and that is no x-ray was done in either of the October periods of time when this man was seen. Is that correct?
A No, I have an x-ray of October 14th.
Q Okay. Could we take a look at that, then, please? Why don't you leave the earlier '86 x-ray up on the left view box. Now we are moving Exhibit 8 over to the left view box and we are going to put up something on the right view box. We do not have a copy, by the way, of the October whatever date it is x-ray.
A October 14, 1986.
Q Okay. Doctor, let me, if I may, mark this document as Friedman 9.

(Friedman Exhibit No. 9 was marked for identification.)

Q Doctor, for the record we have marked as Friedman Deposition Exhibit No. 9 a chest x-ray PA view of October 14, 1986. Now, first of all, Doctor, could you count the ribs on that one just since we have been counting everybody's ribs.
A Seven and a half.

Q Okay. At the time this chest x-ray was taken, you did not do pulmonary function tests. Is that right?

A That's correct.

Q Okay. What does this film show in your opinion? What does it show?

A Well, it's of a lighter penetration or a little different technique than the prior films. I do not believe it shows any major difference from the February film other than the technique. The interstitial markings, I believe, are unchanged when technique is taken into consideration. Maybe even a little less. The markings, once again, are somewhat diminished in the upper lung zones. Once again, I have the opinion that there are bullae present on the basis of these diminished markings but do not see any definite wall for the bullae.

Q Okay. Could you just mark as you have in earlier x-rays the places where you think bullae are in the upper lobes? Just put a little "B" there. All right. So, in summary, would you say that there appears to be little, if any, interval change between the February and the October x-ray?

A There is little radiographic change other than technique of the film and I do not see bullae as clearly delineated on this radiograph, but once again, the technique is different making it harder to assess.

Q I understand. And in light of the x-rays which you have reviewed here, do you think that there is, in fact, probably with reasonable medical probability, as they say, some interstitial fibrosis in the lower lung lobes?

A I do.

Q All right. Doctor, could we move back outside, then, for a moment? I believe that's all the questions I have here.

MR. STUHAN: Was a lateral view taken in October?

THE WITNESS: Yes.

MR. STUHAN: We will need a copy of that, too.

MR. McELVEEN: First of all, could you call them back here a second, because I am going to ask him if there is anything he sees on the lateral?

Q Could you take just a look at the lateral chest view of the October visit and tell us if there

is anything on there that would be diagnostic with regard to any kind of lung disease, whether it be obstructive, restrictive or otherwise. If you are going to say something about it, we will mark it.

A Well, let's mark it.

Q Okay.

(Friedman Exhibit No. 10 was marked for identification.)

Q Okay. Go ahead.

A I believe there is a slight increase in what we call the retrosternal air space, which is this area of air between the sternum and the heart, and I had noticed that on prior lateral x-rays as well. There may be also slight flattening of this diaphragm. It has lost part of its rounded contour, but it is not completely flat.

Q Okay. Thank you very much, Doctor. And we can --

A I would also like the record to show that I would like the court reporter to have possession of these or the Court to, since they are marked as an exhibit. I would rather them not be left in my custody.

Q Yes, we do need copies.

MR. McELVEEN: And, Will, how do you

want to work that?

MR. WATKINS: You need copies of the October 14th --

MR. McELVEEN: PA and lateral chest x-rays.

MR. WATKINS: Can you arrange for that to be done, Gary?

THE WITNESS: That's why I want to leave it with the reporter. If I had the facility in my office, I would, but because it has to be turned over to the hospital, I don't want to trust them.

MR. WATKINS: Let me ask the reporter to get those to me or I will take them from here if you want me to.

MR. McELVEEN: Why don't we talk to Morris about how best to do that?

MR. WATKINS: We will see to it that you get copies.

(Break.)

Q Doctor, let me bring your attention now up to your February 10, 1986, report. Could you pull that report for us? First of all, Dr. Friedman, when this patient came to you on the 10th of February, 1986, I take it that you made up a

patient jacket or file folder for this man. Is that correct?

A That's correct.

Q And we have, I think, subpoenaed and requested your records about six ways from Sunday. One of the things which we didn't ask for interestingly enough was the cover of the folder. I notice that when you have had it out here that there is a big red stamp on the cover called "Allergies." Is that a notation that is made with respect to any patient of yours who has any type of allergic reaction to anything?

A Right. Well, to any medication. If there is -- A notation for -- All charts are stamped with the word allergies even before they are assigned to a patient, and then if we have a patient with allergic problems to a medication that we are about to prescribe or something, we make a notation on here so it will be apparent to anybody who picks up the chart.

Q Okay. Does Mr. Caballero have any allergies to any medications?

A Not that I am aware of.

Q Okay. You did take a history of him which indicated that he did get what I believe he may

have described to you as some hay fever.
A Right.
Q Do you recall that? What was his description to you of that condition?
A I believe he had some runny nose and maybe even some watery eyes, but no respiratory symptoms that particularly accompanied the hay fever and by his description he called it hay fever, and it sure sounded like hay fever.
Q Okay. Doctor, is this individual, would you describe him as atopic?
A I think because of the hay fever it's possible that he may have some atopy.
Q And could you tell us what that is?
A Allergic type of reaction, although in this part of Texas that's not unusual at all. In South Texas also. But I did not find any evidence for other signs of atopy such as dermatitis or asthma.
Q Okay. And when you talk about atopy, are you specifically referring to a problem with this person's immunoglobulin E?
A I am not -- we didn't measure that and I really can't say, and whether he is atopic or not is only a speculation on my part. We don't have

anything other than his hay fever and that's why I said I think it's possible that he may be.

Q Part of the reason I asked that, Doctor, is because I am just wondering if you felt that he could become at least symptomatically better if you had looked for an atopic condition, found one and then treated it.

A No.

Q Okay. And why would that not be --

A Number one is that historically he had no evidence of asthma by history. Number two is on physical examination he had no wheezing, so that there was no reversible component on physical examination.

Q By you?

A By me and by most -- by Dr. VanCampen prior to me -- I'm sorry -- after me. And I can only find one reference to wheezing, I believe, in the chart, although I did not have that when I examined him. But I heard no wheezing. Then the third consideration being that on the pulmonary function studies that at least subsequently we have found that he has no reversibility, and I can't find even respectively in view of records that anyone has

shown he has a significantly reversible element to his airway obstruction on pulmonary function testing.

So what does this mean? Well, by history there is no asthma. By physical examination, except possibly on one occasion throughout the medical records, there was no wheezing or asthma. And by pulmonary function testing there is no reversible component. Therefore whether he has atopy or not, I guess we can measure IGE levels, but clinically it has not manifest itself either through history, through physical examination or through pulmonary function testing.

Q You have not measured his IGE levels because of the reasons that you have mentioned.

A (Nodding affirmatively.)

Q I understand you are saying it didn't happen in this case. Could compromised immunoglobulin levels in a patient result in compromised airways?

A Not -- not per se. You may have IGE levels which are the -- which subsequently result in an asthma type of condition, but it is the asthma itself that then results in any compromise in

airways. There are maybe many people walking around who have IGE abnormalities that until they are triggered have no detrimental effect on the airway per se, so it's not the IGE that does it. It is the reaction with known allergens that causes the problem.

Q In addition to not measuring his IGE, you did not do any type of allergy skin testing.

A That's correct.

Q That's correct.

A That's correct.

Q And the reason for that was what?

A I am not an allergist. He was here for a brief period of time. I have discussed the possibility of doing skin testing in the past purely to provide answers to questions like this which I anticipated, not for the treatment medically of this patient, because I have no reason to believe that that is a probable cause of his problem based upon history, physical and pulmonary function testing.

Q So you have made the suggestion and presumably it's been rejected. Is that correct?

A No, it hasn't been rejected. We may bring him back sometime between now and the time of the

trial to do that but purely as --

Q Purely for litigation purposes.

A For litigation purposes.

Q Okay. Doctor, how long did you see this patient when he first came in to see you?

A I believe we spent an hour and a half or two hours in obtaining the complete history that we took.

Q Before he came in to your office, had you sent either Mr. Watkins or him any type of questionnaire or anything to fill out?

A No.

Q When he came in to see you, did he bring anything with him?

A Not that I remember.

Q Did he bring a lawyer with him?

A No, I don't believe he did.

Q Okay. Did his wife come with him?

A I don't recall.

Q Okay. Did he fill out anything once he got here?

A Yes, he did.

Q Do your records contain everything he filled out when he got here?

A Yes, they do.

Q And is everything that he filled out and all the notes you took, are they accurately reflected in what has been marked as Exhibit 4, which let me just show to you. Let me show you this, which has been marked as 4, and ask you to compare that with your own records.

A Allow me to now check my chart against that. Okay. Your question is: Is that all of the notes there were? Right?

Q My question at the moment is: In Exhibit 4 do we have everything that Mr. Caballero wrote while he was there and everything Dr. Friedman wrote while he was here?

A The answer is no.

Q Okay. Could we get the reporter to mark whatever is left as Exhibit No. 11?

A I believe there is a demographic sheet which the patient fills out his name and address and wife's name and occupation, et cetera, that was not copied. It contains no medical information but it is a demographic sheet that for completeness you may wish --

Q I think for completeness of the record we will ask that that be copied but we don't need to copy it right now. Somebody remember it during

the next break.

A I am going to hand the entire chart to one of the attorneys so that he may look for anything else that inadvertently may be overlooked, but everything in the chart is there.

MR. McELVEEN: I believe if it's okay with all the lawyer's and for completeness' sake, I am going to ask Mr. Atlas, if he wants to, or Mr. Barger, since he has been our good steward so far, just to make a copy of whatever is in the chart other than what's 4 and call it 11. Would that be satisfactory to everybody?

MR. ATLAS: Okay. Everything else in here except 4?

MR. McELVEEN: 4, and that includes the EKG tape. We may as well have it, but just for completeness' sake --

MR. WATKINS: That's all right.

MR. ATLAS: Darrell?

MR. BARGER: Well, I am fixing to leave.

(Discussion off the record.)

(Mr. Gutierrez, Mr. Skaggs and Mr. Barger left.)

Q Doctor, while we were off the record there a moment we had looked at your file and I think it may still be somewhere else. My next questions had to do with some of those matters so maybe we will have to wait just a second here and get them back. I tell you what, in order to conserve some time here, why don't I show you what I have got? I think you will recognize it to be your records, and I just want to ask you a couple of questions about them.

A Certainly.

Q Number one, is your workup of the patient himself, I am assuming, Doctor, that from what you have said so far that everything you have learned about Ricardo Caballero you learned from him --

A That's correct.

Q -- as fas as his history and symptomatology is concerned. Let me show you your 2-14-86 report, which is marked as Exhibit 1. Doctor, you took a history of this patient as being a person here with regard to his cigarette smoking history as being a person who said that he averaged about one pack of cigarettes per day when he started but prior to quitting he was up to two and a

half packs per day. Did he tell you that?
A Yes.
Q Okay. Did you read anywhere in the prior records that you reviewed that he smoked that much?
A Yes. I don't remember where.
Q Okay. You say you did not read his deposition.
A No, I didn't read anybody's deposition.
Q So it was in some medical record somewhere.
A That's right.
Q Okay.
A It may have been -- I don't remember if it was in his military records but it was in one of the records I reviewed that recorded at least a two-pack-per-day smoking history.
Q Well, there is a little difference between a two pack a day and two and a half pack. Is the highest you saw two packs?
A I believe so.
Q Okay. And he reported to you, then, he had smoked as high as two and a half packs.
A That's right. Go ahead.
Q Well, go ahead.
A I did not take two and a half packs versus two packs into consideration for calculating the

pack-year history, anyway.
Q What did you calculate it based on?
A I believe I used a pack a day for the first roughly ten years and then two a day after that.
Q After that, and what did you base that on?
A Just the information he told me of when he started to increase his smoking.
Q Okay. Do you have any reason to disbelieve that when he went to see Dr. MacDougall and Dr. MacDougall reported a pack and a half a day that that is, in fact, what Mr. Caballero was smoking?
A I wouldn't quibble with it.
Q Okay. So if that's the case, Mr. Caballero had, in fact, cut down.
A That would be correct.
Q Okay. Now, Doctor, your report of the Hermann Hospital report, let me show you that. Were you present when that was done?
A No, I was not.
Q All right. Do you know who performed the test?
A No, sir.
Q And this is the pulmonary function test as opposed to the exercise stress test.
A That's correct.

Q Okay. Can you tell from looking at the record who actually did it, not who reported it, but who did it?

A I assume it was the pulmonary function technician at the University of Texas Medical School laboratory.

Q Okay. Do you know who that person is?

A No, I do not.

Q Okay. Do you know what their qualifications are?

A No, I do not.

Q Okay. Do you know whether there are minimal qualifications for respiratory technicians in the University of Texas system?

A No, I do not.

Q Okay. Do you, as head of respiratory pulmonary function testing labs in various hospitals around town have any minimal prerequisites for the qualifications for your pulmonary technicians?

A Most of our technicians are either certified or registered therapists and have had prior testing. We supervise them but have no other requirement or certification.

Q Okay. When you say "certified therapists," you

mean --
A Respiratory.
Q -- respiratory therapists in the sense of being able to take care of patients with lung disease. Right?
A Well, they have completed requisite training and taken appropriate examinations to have certification and at least in the State of Texas we have three levels of respiratory therapist. Therapists that are just on-the-job training, therapists that are certified and therapists that are registered.
Q Okay. Each is a higher level of qualification than the other.
A And training, right.
Q Does the training for this registration and certification include pulmonary function test giving training?
A Yes, sir, I believe that it does.
Q Okay. Do you know that it does?
A I know that that is included in the course curriculum. Whether it's on the examination or something, I can't tell you.
Q Okay. You do not know which of these three classifications the person that did this test at

Hermann was, do you?
A No, I don't.
Q Okay. MacDougall's voluntary ventilation on that test was recorded at forty-six liters per minute.
A That's correct.
Q And that is, I believe we said earlier, the amount of air a person can breathe in and out breathing as hard and rapidly as possible. Right?
A That's correct.
Q Your pulmonary function tests reported -- Well, let me show you that again. The Hermann Hospital PFT's reported this man's height at sixty-eight inches. Right?
A That's correct.
Q Okay. They found a three and a half liter vital capacity. Right?
A That's correct.
Q And that was a forced vital capacity. Right?
A That's correct.
Q Okay. The FEV --
A But just for the record it is also equal to the slow vital capacity, which was also -- or static vital capacity which was also 3.49, which is the

same.

Q Okay. Does that mean that in your opinion he was not trapping air?

A I can't say. I can only say that the vital capacities at this date and time were equal.

Q Okay. So whether he breathed out slowly or as rapidly and hardly as possible, they were the same.

A Right, and I would say he is trapping air significantly but not because of the vital capacities, but the residual volume was 213 percent of predicted so we know he was trapping some air.

Q Okay. That compared to the 206 percent of predicted by Audie Murphy. Correct?

A That's correct.

Q The total lung capacity that you took was 117 percent of predicted and at Audie Murphy it was what? I think you have got that right in front of you here.

A It was 122 percent of predicted.

Q Okay. So is that within test reliability?

A I think so, yes.

Q The diffusion you measured at 6.94. Diffusion is the ability of a gas in the case -- in your

carbon monoxide to get across the alveolar wall across the capillary wall and into the bloodstream. Is that a fair statement?

A Yes.

Q Okay. And carbon monoxide is used as a test gas because there is relatively little of it in the lungs and you wouldn't confuse it with oxygen, I guess. Right?

A Correct.

Q And also because carbon monoxide diffuses easily. I'm sorry -- diffuses with about the same ability as oxygen diffuses, doesn't it?

A Yes.

Q And it also latches onto hemoglobin with much more affinity than oxygen does. Right?

A Right.

Q So there is very little back pressure with carbon monoxide and it's a good substitute gas for showing how good the lung is in transferring a surrogate for oxygen into the bloodstream. Is that fair?

A It measures the transfer of carbon monoxide is what you can really say.

Q Okay. What does it mean to you with regard to the transferability of oxygen? Does it say

anything?
A It can be assumed that it also would be applicable for oxygen.
Q Okay. And why is that?
A Because it is used just as a marker gas and it is felt the mechanisms are similar in the transport of the two.
Q His diffusion was what percent of predicted?
A Twenty-one percent.
Q All right. In light of the pulmonary function test values that you got in this patient, do you think that that diffusing capacity represented -- First of all, do you think it was done right? Is it an accurate reading?
A Yes.
Q Okay. Secondly do you think that it was in part due to emphysema and in part due to fibrosis?
A Certainly could have been contributed to by the fibrosis, yes.
Q Okay. Do you believe that the extremely low diffusion capacity value that was obtained is consistent with the resting blood oxygen of 76 that he had?
A We have to remember that on one occasion in another hospital it was 53. With exercise it

drops down, I believe, to 54 at Hermann Hospital.

Q Right.

A And I certainly believe that his diffusion capacities are compatible with those findings.

Q You would agree, would you not, though, that that diffusion capacity measured at Hermann was measured at rest, wouldn't you?

A That's correct.

Q Okay. People don't measure diffusion on exercise, do they?

A No, but the point being that if there is a diffusion probably that with exercise oxygen will fall, whereas the gas will be normal at rest. So that the -- So that the oxygen may be normal at rest but with exercise you increase shunning and oxygen will fall with exercise. That fact that the oxygen fell with exercise is compatible with finding a marked abnormality in the diffusing capacity.

Q If the diffusing capacity at rest was only twenty-one percent of predicted, though, wouldn't you have expected to see a lower resting arterial blood gas since, in fact, diffusion is indirectly measuring what arterial

oxygen measures are valued directly?

A I would not have been surprised to see a lower blood oxygen level.

Q Okay. All right. One of the values that you measured at the time of this test was the airway resistance.

A Right.

Q You call that normal.

A Right.

Q Is the airway resistance value generally normal, increased or decreased with emphysema?

A Usually it's normal, especially with a lot of small airway disease. I would not be surprised at all to see the airway resistance normal.

Q What does airway resistance measure?

A It's more an indicator of large airway obstruction, and once again, had we been suspicious of asthma or atopic disease involving the larger airways, we would have expected airway resistance to be increased. You may have extensive small airway disease before the airway resistance increases.

Q The airway resistance is like thinking about breathing through a straw empty and breathing through a straw that's filled with milk shake in

the sense that it's tougher to get air through the milk-shake-filled straw.

A I like to think of it more as a difference between you breathing through a straw and breathing through a larger tube than just how much resistance there is to air flow is really what it measures.

Q Okay. So the larger the caliber of the tube, the easier air goes through. The less resistance there is.

A That's right.

Q As the caliber of the tube shrinks, the tougher it is for air to move through there and therefore the increase in airway resistance.

A For a large tube, that's correct.

Q As between a small tube and a large tube.

A That's correct.

Q All right. So your view is that this man does not have much in the way of large airway disease.

A That's correct.

Q Okay. When the exercise stress test was performed at Hermann Hospital, to your knowledge was the resting arterial blood gas taken at the beginning of that test?

A Normally it would be.
Q All right. Was the end blood gas, the exercise or material blood gas, taken at the end of that test?
A To the best of my knowledge, yes, it was.
Q Okay. Now, in the --

(Mr. Bleakley and Mr. Atlas left during a break.)

Q Doctor, at the time of the exercise stress test, were you present?
A No, I was not.
Q Was that done just after the pulmonary function studies were done down there?
A To the best of my knowledge, yes, sir.
Q Let me just ask you this, Doctor: Let me show you the pulmonary function studies again. First of all, can you tell me if there is anyplace on that study or anywhere in your record for that matter, and let me give you your record back here for a moment. Would that be right here? Your file is right there in front of you. I'm sorry. Is there any place on that record or anywhere else in your records that reflect the degree of cooperation that the patient gave?
A I don't see that, no, sir.

Q All right. Were any postbronchodilator studies done on this patient?
A In reviewing the study, I did not see that any were done.
Q Okay. I believe you have testified before and I believe that you would agree that your position is that in anybody who has got markedly abnormal pulmonary function postbronchodilator studies should definitely be done. Is that right?
A That's correct.
Q Why didn't you have them done this time?
A Well, I did not -- I was not present when these were performed.
Q I understand.
A The patient was sent down to the University of Texas Medical School to the Texas Medical Center and normally the postbronchodilator study should have been performed. Why they did not perform them, I do not have any explanation. They were not done under my immediate direction or supervision.
Q Okay. And, indeed, you didn't send him back down there for poststudies.
A That's correct.
Q There appears only to have been one trial here.

Is that right?
A They always do three trials down there. I don't have the raw data, but I know that they always do a minimum of three trials.
Q Okay. Are there tracings with these studies?
A I did not receive them, but I am sure they would be on file or should be on file with the laboratory at Hermann Hospital.
Q Okay. You would agree with me, would you not, that if you were to have submitted this report to, say, the Social Security Administration they would have bounced it in a minute because the tracings weren't attached and no postbronchodilator studies were done and no note of cooperation was present? Right?
A I don't know if they would have bounced it, but I certainly feel like those would be appropriate things to have.
Q I mean I can show you the regulations and we can talk about it here.
MR. WATKINS: Oh, that's foolish. Let's get on with it. Shit!
MR. McELVEEN: Mr. Watkins, please.
MR. WATKINS: I am getting a little bit miffed.

Q The fact is that these studies were not done the way you would like to have seen them done. Is that right?

MR. WATKINS: He has admitted that, J. C. I don't know how many times you want him to admit that.

MR. McELVEEN: I am going to stay on this one as long as I have to, sir. This is just prolonging things.

MR. WATKINS: We may just come to arms on this. I am getting tired of this. Now, put your question to him and I will tell him whether he can answer it.

Q All right, sir. The cardiopulmonary stress test that was done, was that done at the same time that the testing was done for the PFT's?

A You have already asked me that and the answer is yes.

Q And the answer is yes. Let me show you what we have obtained from your records with regard to the exercise stress test. Now, the date on that exercise stress test, I think your own records will reflect, is February the 9th, 1986. Is that correct?

A I believe so, yes, sir.

MR. WATKINS: February 10th, isn't it?

A I think they put it down wrong here because it was done at the same time.

Q So the date is a misprint.

A I would agree with that.

Q All right. Now, in that exercise stress test, there is sort of a cover sheet there that summarizes the study and then the underlying study is the values on up to the number of watts he got and the number of minutes he ran and so forth. First of all, he did that on a bicycle or goniometer, I believe. Right?

A I think it was a bicycle, yes.

Q Is it your experience that with a bicycle or goniometer that there is some -- that if people haven't ridden a bicycle much that they do more poorly on that test than if they have ridden a bicycle in their, you know, personal lives?

A It depends on the directions and the tester, how hard they are driving them. I would guess if a person was a European bicycle champion and was proficient at pedaling, as opposed to some person who had never been on a bicycle, the mere performance of the test would probably be significantly different in the two not counting

any other factors.
Q Do you know whether Mr. Caballero ever rode a bicycle?
A No, I don't.
Q All right. Well, let me ask you this: There is a notation on there that the blood gases were measured through an ear oximeter. Do you see that?
A That's customary but I don't see it but I would certainly accept that as being standard procedure.
Q And the ear oximeter is just a little thing on your ear that measures the blood gases through your ear.
A That's correct.
Q Does that actually puncture your ear so that the the needle is in touch with the blood?
A No, it does not.
Q Okay. And the other way of measuring blood gases would be through the arterial catheterization, putting a needle in your arm. Right?
A Now, I believe that the arterial gases reported on the summary sheet are arterial sticks. The ear oximeter was only measuring minute to

minute.

Q Oh, okay. In your opinion, would the more accurate measure be the drawing of blood from an artery?

A Right. And I believe that that's what MacDougall's exercise samples reflect.

Q Oh, okay. Now, there is something on there called "minute ventilation"?

A That's correct.

Q And minute ventilation is his ventilation per minute in liters.

A That's correct.

Q Now, is that the same thing as MacDougall's voluntary ventilation except measured a little different way?

A It's measured a little differently, but I think it reflects pretty much the same thing.

Q And on the cover sheet of this report, he has said will you agree with me that his minute ventilation was eighty-two liters a minute at maximal exercise?

A I believe that's correct.

Q Okay. Now, that was actually pretty good.

A That was pretty good.

Q And it's quite a bit higher than was earlier

measured. Is that right?
A I believe so.
Q To what do you attribute his increased ability to do that, if you will?
A I don't have an answer.
Q Okay. That would be inconsistent with severe emphysema, though, wouldn't it or would it?
A I am not certain. I would have to check on that.
Q Okay. Is there anything, Doctor, about the exercise testing that was done down there, the stress testing that you feel was not in keeping with what you would have wanted them to do if you had been down there and said, "Do it this way"?
A No.
Q Okay. And just briefly to summarize, there were some discrepancies, though, in the resting pulmonary function testing.
A As far as MVV and minute ventilation.
Q Right. I understand, but I guess what I mean is just in so far as the way the tests were conducted, in other words, they didn't send you the tracings and they didn't note his cooperation and so forth.

A That's correct.
Q Okay. Now, the October 14th test that was done does have a spirometric tracing, I believe, and your records have it, and I will just show you this.
A That was done under our direct supervision.
Q And that was done in Corpus Christi.
MR. WATKINS: That probably was not the 14th.
Q I'm sorry. You are absolutely right. It was the 2nd. I'm sorry, sir. And I might just mention to clear up for the record purposes, the report that your partner submitted was dated the 3rd of October but his examination was apparently the 2nd of October and that's why everybody is getting confused about the 2nd and 3rd. In addition, did you do another alpha 1-antitrypsin test here or was one done in Corpus Christi?
A One was done sometime in October to the best of my recollection, yes, sir.
Q What did that show?
A It was normal.
Q Why did you do it again?
A Because I think initially I couldn't find the

slip from the first one, to be honest.
Q Okay. All right. So you did it again.
A I just wanted to be absolutely certain that I had not overlooked anything other than cigarette smoking to cause this man's pulmonary problems.
Q What significance, if any, is the difference in result between the 240 or 280, I think, that he had on the earlier test and the 350 now?
A They are both normal. As long as they are within the range of normal, it's fine.
Q I mean do you see tests vary that much within normal limits and so forth?
A Sure.
Q Okay. Now, when the testing was done down in Corpus Christi and you reviewed it up here and it showed a FEV1 of .8 liters, I believe, let me stop right there. Was the testing that was done by your office in Corpus, did they do the pre and postbronchodilator test?
A Yes, they did.
Q All right. Did they note the patient's cooperation anywhere to your knowledge, and it may not be necessarily on that record. It may just be somewhere else.
A I don't know if they noted it or not. I know

the technician who perfomed this is a NIOSH certified respiratory therapy technician and the machine is a NIOSH-approved machine, because as opposed to the University of Texas testing, this was done directly under my supervision and control. And had there not been good patient cooperation, it would have been noted for sure.

Q Okay. The .8 liters of FEV1. You don't believe that clinically speaking that is a low enough value to suggest that the patient at least go on nighttime oxygen.

A He may be getting very near the time of taking nocturnal oxygen.

Q Okay. But you don't think the .8 liters is it, necessarily.

A You have to take other things into consideration. I am not sure if you are aware of the criteria for which many insurance companies or Medicare will pay for oxygen and that is that they require an oxygen below fifty-five in order to pay for it and it can be expensive, and with the FEV1 of 0.8 liters, sometimes they will pay for it with a resting oxygen above fifty-five, but you have to submit the lower exercise oxygen and the spirometry and

he -- it may certainly be in a situation -- I know it's been recommended that he come back ninety days after the last visit, so I would anticipate if he was seen in October we will see him after the first of the year, and if those values persist, then he will be recommended to be put on oxygen.

Q To your knowledge, were any arterial blood gases taken at the time in the October visit?

A They were not. I have knowledge that they were not.

Q Okay. With a resting FEV1 of .8 should they have been in your opinion?

A I think it probably would have been a good idea for us to have taken them. We just didn't.

Q No diffusion was done, I take it.

A That's correct. It's anticipated that this man will have complete studies done sometime in January, which will be a year roughly after the original study since the last ones were done in February, and at the time of the January testing, I am sure we will do diffuse and his blood gases and the total --

Q Are there any features about the patient that are more highly correlated than others with the

prognosis for how long he would live, if you understand what I am saying?

A Yes. In the reading of the literature, I believe the Burrows article which I cited and other articles suggest that the FEV1 is the single factor which most closely correlates with life expectancy.

Q The FEV1 is?

A Yes.

Q Okay. And so as that goes down, the life expectancy goes down.

A That's correct.

Q Is there any information in the literature to your knowledge that the survival rate in chronic obstructive lung disease is related in any way to pulmonary vascular resistance?

A I am sure that those articles exist. The difference being that the FEV1 is much cheaper and less painful and easier to test than is pulmonary vascular resistance.

Q And you have not tested pulmonary vascular resistance.

A Nor do I intend to.

Q So you don't know whether he has pulmonary hypertension or not.

A No, I don't.
Q Okay. Do you think that in this patient a bullectomy, that is, remove of one or more bullae would be medically indicated?
A No, definitely not.
Q Why not?
A Number one is I don't have any evidence that those bullae are clearly compressing underlying lung which is healthy lung. I am suspicious of these increased markings in the lower lung zones. Number two is that if his FEV1 remains below 1.0, I think that any type of thoracic surgery in his case will be more likely to be detrimental than helpful and probably he would not make it off the operating table or off a respirator postoperatively. I would greatly discourage any operative procedures in this man unless there was some very clear-cut evidence of resectable or treatable problem, and at this time in this case I don't think the clinical information points to that.
Q Do you believe that in any way either a CT scan or regular tomograms of his lungs would help elucidate whether he has resectable bullae?
A I think that they would -- I think that a CT

scan would help elucidate the size and extent of the bullae. I don't think it would tell you if they were resectable necessarily. It's possible that VQ scans with CT scan --

Q Just a moment. Ventilation profusion lung scans?

A Right. Might give further information, but my clinical impression after taking care of an awful lot of people like this is that in only rare cases is bullectomy successful and this is not the type of case or the type of x-ray picture that I see that would respond to a bullous resection.

Q Do you think that a CT scan, for example, would help rule in or rule out whether the man had a substantial component of fibrosis?

A I don't think that it would add anything to the x-ray. I believe that the x-ray shows fibrosis, which I have pointed out. And I think that the CT scan would confirm it, but it's not going to tell you anything above and beyond, in my opinion, what you already have.

Q Do you think that a course of steroid medication would benefit this patient?

A No.

Q Why not?
A Several reasons. Number one is there is no evidence of any reversible airway obstruction or inflammation within the bronchial tubes. There is no wheezing. He doesn't have a lot of secretions or other evidence of inflammation that we would be trying to cool down. Number two is that I guess, oh, now it was eight, nine hours ago, earlier in the day when we began the deposition, someone asked me about how people die or how this man might die with his lung disease. About a third of the patients develop stress ulcers, and as a rule of thumb, I use steroids rather judiciously in COPD patients unless there is a very clear-cut indication, and in the absence of wheezing and in the absence of all the secretions, I don't think I could really in medical probability anticipate a beneficial result from steroids.
Q He has been noted from time to time in his records not to have taken his medications. Do you have any reason to believe that he is not taking what you prescribed for him?
A I have no knowledge. He may not be taking them. If he has been poorly compliant in the past, he

may not be taking them now. However, as sick as he is, I think he is scared enough to do whatever he is supposed to do.

Q Would his failure to take his medications on a regular basis have any effect on his life span, do you think?

A I don't think so.

Q They obviously would have an effect, though, on the comfort, I guess, with which he lives out the rest of his life.

A That's right. I think it might affect his life comfort, but it won't affect life expectancy.

Q All right. You mentioned in your report that you thought that this man was in an increased risk of developing lung cancer. Do you have a percentage, if you will, of what you think the excess risk in this patient is?

A I can only say that I think that the excess risk is somewhere between ten and twelve to fifteen times maybe a nonsmoker and with a -- and that's really all I can say.

Q Is that another way of saying, if you will, that by virtue of this man having been a smoker, his risk is the same as smokers generally, not necessarily because he has got emphysema?

A That's correct. And also taking into account that he has at least a fifty-pack-year history by my compilations of smoking, which is a significant risk history for cancer.

Q Do you think that his risk is going down now that he has stopped?

A I believe so. Now, it won't -- Let me correct that. I don't think it is going down now. I think that it will go down after five years somewhat and it will go down significantly after fifteen years. Unfortunately I don't believe he is going to live to see the latter and I don't think he is going to live much beyond the five-year limit, if he lives that long.

Q Yes. Do you believe that this man would benefit from respiratory muscle training?

A Once again, the studies that have been done on pulmonary rehabilitation, and we have a pulmonary rehab program at our hospital called the PEP program which stands for pulmonary education program and in setting it up, it would appear that quality of life is improved and possibly frequency of hospital admissions is reduced, but that length of survival is probably not altered through the muscle training and the

rehabilitation programs.

Q If you were to put him on a rehabilitation regimen, what would you put him to doing?

A Oh, I think that really all that he could be put to doing would be some form of increased exercise or walking program to improve his general conditioning. He has no secretions at this time or cough so that postural drainage is not going to be much of a drainage to him or benefit to him. He has already stopped smoking so that no longer is an option for improving his status. He is not retaining fluids so diuretics are no use. He is not wheezing so further bronchodilators are of no use. He has no evidence of an inflammatory process that steroids would help, so really from a rehabilitation standpoint, he might benefit from breathing exercises such as pursed-lip breathing, abdominal breathing, possibly some just getting him to walk or climb stairs at a slow pace to improve his general conditioning and reduce oxygen consumption, but I think that the benefits are going to be very marginal in this case because unfortunately there is not much that's reversible.

Q Do you think that he could be rehabilitated so that he could walk farther with less effort?
A I think through the use of supplemental oxygen if he wore, for example, a Lindy Walker or one of the liquid oxygen systems, that he could walk farther through the use -- with the use of supplemental oxygen. I think it's unlikely he is going to change significantly just with exercise alone.
Q As of this last time that you saw him, what did you prescribe for him?
A I believe that he was kept on the same bronchodilator medications.
Q Okay. If you were going to perform any further testing on this man that you wanted to or could, would you perform any additional tests on this man at this point in time to elucidate in your mind what he had or what the relative contributions of what he does have make to his pulmonary function reduction?
A That's a multi-part question. First of all, I think that I am going to request and have requested that he have repeat pulmonary function studies performed sometime around the first anniversary of the original studies, which would

be -- I am anticipating January of this year. I think that more for medical-legal than treatment reasons a CT scan of the chest may be of benefit to better outline the presence of bullae or blood formation than can just be seen on x-ray. I don't think it's going to tell us anything about his fibrosis.

The issue of allergy testing was raised. Once again, I do not believe it is going to impact one way or the other on his management since he does not really project any of the allergic symptoms within the chest that one might hope to treat. However, if it is going to be raised as an issue in questioning the diagnosis, I feel it will be a disservice to him not to prove to all concerned that it is not an issue, and if that's what it will take to make everybody happy, then that's what will probably be done.

MR. WATKINS: You won't make them happy. Forget that.

Q All right, sir.

MR. WATKINS: The more light you shine in their eyes, the blinder they become, like a Louisiana coot owl.

MR. McELVEEN: On that note I am just wondering if we could take a very short break. I really am, as it seems, almost through.

MR. WATKINS: Good. Let's make it short.

(Break.)

Q Back on the record. Just as a housekeeping matter, I believe that we have earlier indicated, Doctor, that we were going to ask that one page of your record which was filled out by Mr. Caballero be marked as Exhibit 11. I would ask that be marked at this point in time.

(Friedman Exhibit No. 11 was marked for identification by the reporter.)

Q Now, Doctor, I believe you have earlier indicated this, but Exhibit 11 plus Exhibit 4 represents everything that you or Mr. Caballero wrote. Is that correct?

A Yes, sir, to the best of my knowledge, and let the record show that I gave my entire chart in its entirety to Mr. Atlas, one of the defense attorneys, to review, so anything that's there has been handed to you.

MR. WATKINS: And were reproduced.

Q Right. Doctor, let me show you just very briefly something that was filled out at least initially for Mr. Caballero on 10-2. Is that your form for physical examination in your office?

A That's correct.

Q There are the categories of person, as it were, that you have choices for are what there?

A Caucasion, black and Hispanic.

Q Okay. And is there any particular reason why you separate out Hispanics from Caucasians or blacks or why you make a notation of whether a person is Hispanic or not?

A Only from the standpoint that we are involved in some epidemiologic studies with the thing I had mentioned with the asbestos study where it's requested that we have a standard physical examination form and it can easily be entered for any type of demographic studies or epidemiologic study that if we ever wanted to put people into a computer through the School of Public Health, that all of the information that we need for the physical examination is contained on this standard form.

Q Okay.

A And this was not prepared just for Mr. Caballero. It's just standard.

Q Okay. And so there is nothing in the fact of a person being Hispanic that would result in any -- I mean that you would look at any different factors.

A No, sir.

Q Okay. Now, Doctor, you testified some today about your view with regard to how it is in your opinion cigarette smoking causes emphysema. Now, I want to talk to you briefly about that, if I may. First of all, I want to ask you if you have had occasion to read an article, again, that's in the AMERICAN REVIEW OF RESPIRATORY DISEASE and which is a State Of The Art article in 1985 entitled "Elastasis and Emphysema, by Dr. Aaron Janoff."

A No, I have not read this.

Q Do you know of Dr. Janoff?

A No, I do not.

Q All right. I am going to, if I may, just read you a couple of comments and ask you to comment on them from this report. And the first one now, and I am going to try to read these sort of slow into the record, the first comment that

Dr. Janoff makes is on Page 418 of that article. He says, "Thus the protease-antiprotease imbalance hypothesis grew largely out of circumstantial evidence derived either from animal models of the disease induced by elastolytic proteases or from a small proportion of patients with emphysema whose disease was genetically linked to a deficiency of antielastase." Now, first of all, you agree with that. To the extent you know it, do you agree with it?

A I have not -- I am not familiar with the article and I can't agree or disagree.

Q Okay. Let me, but the deficiency of antielastase would be the alpha 1-antitrypsin deficiency, isn't it?

A Yes, that is a deficiency of antielastase.

Q The next sentence which I will ask you to comment on and agree or disagree is, "In the majority of patients, however, protease-antiprotease imbalance is not readily evident, and should it be present, its origins would be difficult to explain on the basis of presently available facts." Did you agree that at least most of the patients you see have no

deficiency in their or imbalance in their protease-antiprotease?

A I would agree that it is not measurable in the bloodstream. I do not agree that it is not measurable at the cellular level in the lung where it may be taking place. We just don't know.

Q Okay. And you, yourself, of course, have not done any studies with regard to measuring it at the cellular level.

A That's correct.

Q Let me read this statement: "Because most of these patients are smokers, it has been suggested that smoking may elevate the lungs' elastase burden and/or depress the function of lung elastase inhibitors." And that's, I believe, what you have said is your theory of or your opinion as to how the disease is caused. Right?

A That's the opinion put forth in the -- I'm sorry -- in the Surgeon General's Report and one that is commonly espoused, yes, sir.

Q Okay. And the one that you adopt.

A That's correct.

Q Okay. The next sentence, though, I want to ask

if you agree or disagree with: "Yet the majority of smokers do not develop clinically evident emphysema in their lifetimes." Do you agree with that?

A I agree with that.

Q "The one figure that has been used in various places is that approximately ten to fifteen percent of smokers develop clinically evident emphysema in their lifetime." Do you agree with that number or do you --

A I have heard the number fifteen percent and I would have no quarrel with that number.

Q Okay.

MR. TOWNSLEY: Fifteen percent develop what stage of emphysema?

Q Clinically evident, which is the term I have used, and that's, of course, the term you agreed with. I am not trying to trick you here. I am trying to read a petition here. The author goes on to note as follows again on Page 418: "Chronic cigarette smoke exposure alone has not been employed with uniform success as a means of producing emphysema in laboratory animals." Do you agree or disagree with that or have any --

A That statement is a contradiction to the

opinions voiced in that identical journal in the American Thoracic Society statement on smoking where laboratory studies were cited as being conclusive in establishing a cause and effect relationship or causality.

Q Well, okay, so you disagree with that statement.

A In citing the reference from that exact same journal and that reference was adopted by the executive board of the American Thoracic Society, whereas I am not sure about this one.

Q Okay. Well, I believe you described what State Of The Art articles are and I will represent to you that this is a State Of The Art article from --

A May I have one moment to look at it, because I have not seen it before?

Q Sure.

A I would like to see exactly what he set out to do and what his conclusions are.

Q Yes, that's where I was quoting from. Go ahead and take a look at that. Sure.

A Thank you.

MR. HANKS: J. C, is this the Dr. Janoff who received several times money from The Council for Tobacco Research?

MR. McELVEEN: Well, as Mr. Bleakley

said, I believe that one advantage of doing a deposition is I get to ask the witness questions and I don't interchange between the lawyers and myself.

MR. HANKS: What's this Dr. Janoff's first name?.

MR. McELVEEN: Aaron.

MR. WATKINS: That's the same one.

(Break.)

MR. TOWNSLEY: Seriously, don't you think you ought to identify this writer as having received tobacco industry money if you are proposing him as an authority as far as the identity of the person?

MR. McELVEEN: Mr. Townsley, I believe that the deposition of the doctor is exactly that. I am asking questions and he is answering them and I believe that that is the way it goes. And I believe that's the way you would agree it would go.

MR. TOWNSLEY: No, I think only out of fairness if he is somebody that's being funded by the tobacco industry that it ought to be conceded, since you are asking questions about just select parts in a

rather long article.

MR. McELVEEN: The doctor has the article in its entirety to review, so if he has other comments to make, he may if he wishes.

(Break.)

MR. WATKINS: On the record, I think we are making a mountain out of a mole hill. The doctor is just earning his grant.

(Break.)

A I have now had an opportunity to review an article called "State Of The Art, Elastases and Emphysema." I have spent about between five and ten minutes of just skimming this rather lengthy twelve-page article which is also quite complicated. I have only read portions of it and have come to the following opinions in regard to it --

Q Well, I don't believe any question is pending, Doctor, except do you agree that there is no satisfactory animal model of emphysema with the use of cigarette smoke alone? Is your answer to that "yes" or "no" having reviewed the article?

A I don't know the specific answer to that from

looking through the article or that your question can't be directly answered based upon the article.

Q Okay. Well, then, if I may, sir, get the article back and ask you this question and that is: When was the American Thoracic Society statement that you referred to earlier with regard to "Cigarette Smoking and Emphysema, A Causation," printed in the AMERICAN REVIEW? Was that 1983?

A I believe it was '84.

Q Okay.

MR. TOWNSLEY: Let me ask you: Has that been given an exhibit number?

MR. McELVEEN: No, because I was just reading from it. I wasn't going to offer it.

MR. TOWNSLEY: I think we ought to go ahead and have it marked and attached to the deposition, whether it's an exhibit or not. It has been asked questions in reference to it. You have read from it. I think it ought to be put in the deposition.

MR. McELVEEN: Just a moment.

(Discussion between Mr. McElveen and

and Mr. Stuhan out of the hearing of the reporter.)

MR. McELVEEN: I believe at the moment that we will not offer this as an exhibit.

MR. TOWNSLEY: I don't think you ought to be asking questions about something you are not willing to attach to the deposition.

MR. McELVEEN: Mr. Townsley, you, in all likelihood, have asked questions from a lot of sources, you have never offered as exhibits in trial.

MR. TOWNSLEY: I think it's ridiculous.

MR. HANKS: Why don't you just let us make a copy and we won't attach it?

MR. McELVEEN: I certainly have no problem with that. It's a part of the public literature.

MR. HANKS: Well, you have it right here.

MR. McELVEEN: I have my copy marked up and that is in my opinion work product.

MR. HANKS: That's just underlined.

MR. McELVEEN: I am claiming work

product here. Would you like to dispute that?

MR. WATKINS: Just put it away. Don't ask any more questions from that.

MR. McELVEEN: Are you going to direct him not to answer?

MR. WATKINS: You goddamn right. You better believe it. I will get to the bottom of that right quick.

Q Let me, if I may, Doctor, refer you to the 1984 Surgeon General's Report. Are you familiar with that document?

A Yes, sir.

Q And I believe you referred to it in your prior testimony. On Page 277 of the 1984 Surgeon General's Report there is a statement which I will be glad to show you and let me read it to you first, though: "However, an animal model for the development of emphysema using the inhalation of cigarette smoke alone has not been convincingly demonstrated." Do you have any reason to disagree with that?

A No.

Q All right, sir. Now, Doctor --

A Other than what I have already cited.

Q Right. I understand that. Doctor, let me ask you this question: I believe that in one of your earlier comments to Mr. Bleakley, you indicated that the probable source of some of these elastases, the substances that destroy the elastin in the lung and broke down the lung were leukocytes and neutrophils and other cells that would come in and sort of scavenge particles in the lung. Is that your testimony?

A I believe that's the source, yes.

Q Okay. Is there a very large production of neutrophils and leukocytes in the lung in lobar pneumonia?

A Yes, there is.

Q All right. To your knowledge, has a past history of lobar pneumonia ever been associated with the development of emphysema?

A No, not to the best of my knowledge.

Q All right. The leukocytes and neutrophils and so forth that come and scavenge up particles in the lung that might be produced by cigarette smoke, for example, would presumably go anywhere the cigarette smoke goes. Is that your belief?

A I would assume that they would go wherever the smoke goes.

Q Yet emphysema as it occurs in smokers is primarily an upper lobe disease, isn't it?
A It's certainly worse in the upper lobes.
Q Why is that?
A I don't know.
Q Okay. Now, Doctor, let me ask you just a few more questions and then I think, indeed, I may well be finished. The first one is you have indicated to Mr. Bleakley that you did not think that the steam accident that occurred to Mr. Caballero back when he was in the military had anything to do with the development of his emphysema. Let me ask you one more question along those lines and that is: Do you believe that steam injuries can, in fact, cause lung damage?
A I --

MR. WATKINS: You mean on a single, isolated instance like that?

Q Well, a single instance of a steam inhalation.
A I would think not and hope not from the standpoint that steam -- and anybody who has had a kid who is sick and ever used a humidifier or steam tent, then that means that we have been doing more harm than good all these years in

medicine and we continue to recommend steam inhalation, so I would hope that steam, which is just water vapor, is not harmful.

Q Would you believe that the temperature of the steam in a given case might have an effect on that?

A If there was evidence of thermal burn to the trachea and to the windpipe and to the back of the throat, which I found no evidence of in reviewing these records, I would say absolutely not. If you are talking about thermal burn, then that's another issue, and I have taken care of plenty of burn patients with inhalation of hot gases, but a steam injury has occurred here with no evidence of burning back in the pharynx, larynx, trachea. I would say absolutely not.

Q Do you believe, Doctor, that nitrogen dioxide inhalation can cause emphysema?

A It can.

Q Okay.

A I'm sorry. I believe it can cause bronchitis or bronchiolitis. I am not sure it causes emphysema.

Q Okay. So it can cause a chronic obstructive change in the lung, I guess. Is that what you

are saying?
A In high concentrations, yes, sir.
Q Okay. And do you know whether any of the exposures that Mr. Caballero had exposed him to nitrogen dioxide in any concentrations?
A I am not -- I don't want to say "any concentrations," but I am not aware of any significant exposures to nitrogen dioxide in high concentrations which he has had.
Q If Mr. Caballero were to have worked over gas stoves in the military, and I believe that Mr. Watkins indicated that he may not have, but if he did, in your opinion would a gas stove put out any nitrogen dioxide or do you know?
A Any flame will -- Any extreme temperature, and it has to be a very high temperature, will unite oxygen in the air with nitrogen in the air to form nitrogen dioxide, but that's a very common phenomena in low concentrations for which no adverse effects are known. The only places I have seen high concentrations of nitrogen dioxide are two places that I am familiar with. One is in welders where you have a twelve or fourteen-hundred-degree welding arc producing nitrogen dioxide, and the other was during the

Challenger Space Shuttle reentry with some word that came from NASA was during reentry high temperatures were generated and nitrogen dioxide entered the capsule and there were some fleeting pulmonary changes in the lungs of the astronauts, but that's the only two instances I am aware of other than direct occupational exposure.

Q You took no history of Mr. Caballero that he was a welder nor do you have any reason to believe that he ever welded.

A To the best of my knowledge, no.

Q Did you take any history or have any reason to believe that he ever worked around welders, for example, when he was rigging iron?

A It's possible that he could have but I have done a lot of work with welders, and unless a man is welding, doing the welding himself and directly in the plume of the smoke near the rod, the levels of nitrogen dioxide are off dramatically at short radiuses from the tip of the welding rod.

Q I understand that earlier you have ruled out in your opinion and said why you ruled out that the being struck by the calf when he was bulldogging

the calf in the truck caused any bullous changes in the lung, but do you believe that trauma can induce a bullous change in the lung under any circumstances?

A Oh, I wouldn't -- The term "under any circumstances," is so vague I wouldn't be able to respond to it, but I will say in fourteen years of practice I have never seen a bullous change traumatically induced. I am not ruling out the possibility that there is some hypothetical situation it could occur in. I definitely do not think that a bullous change in the top of this man's lung on both sides would be the result of a traumatic injury to one side which was low down at the level of the eleventh rib. That would be nonsense.

Q You mentioned in your report of February the 10th, I believe, that the occupational history included exposure to some dust and some dust, I guess. And if you want to make reference to that, you are welcome to. I am not trying to put words in your mouth, but are there --

A Well, do you remember under what circumstance?

Q I was just looking at the occupational history generally, I think, the one that you did.

A I don't remember.

MR. WATKINS: I don't remember any reference to dust.

Q Let's see. He only did dirt work. I'm sorry. Dirt work, was not exposed to asbestos or other pulmonary damaging materials. What other pulmonary damaging materials would you have been looking for besides asbestos under those circumstances?

A Silica, Talc.

Q Are those the only two?

A (Nodding affirmatively.)

Q And you did not find either of those. Right?

A That's correct.

Q Later on in that October report, I believe that you went back and -- Just a moment, if I may -- made a notation of toxic fumes or gases. What toxic fumes or gases are you attempting to rule out in October?

A Oh, any exposure to high levels of chlorine or ammonia would have been the -- chlorine, ammonia and phosgene would have been the three toxic gases of greatest concern.

Q Okay. And what kind of lung injury would those produce? Would they produce emphysematous

changes?

A I think just for the record that it's my opinion this man has chronic obstructive lung disease with changes in addition to emphysema, although emphysema in all probability is present. I am concerned about other small airway type diseases and obstructive lung disease in this gentleman that we talked about at length. I don't want to ever have it misunderstood that I have only said he has emphysema, and for that reason, I inquired as to chlorine and ammonia which can cause permanent small airway injury when present in very high concentration.

Q You also mentioned in your October note, "No pesticide exposure." What kind of pesticide exposure would produce lung injury and of what type would that be?

A Oh, I had inquired to pesticides because of the general store. I am not even sure. I was just going to check and make sure that there were no organo-phosphates or other pesticides which although it would be unlikely to cause pulmonary injury, might cause a sensation of weakness or other problems that might impact upon respiratory function.

Q You mentioned something that raises a question in my mind and that is you have ruled out, I believe, a genetic component to his lung disease. Is that right?

A As best I can through obtaining a thorough family history and the alpha 1 screening.

Q Okay. Aside from the alpha 1-antitrypsin deficiency, which are you saying that that is a genetic predetermination?

A Correct.

Q Okay. Aside from that, do you believe that genetic factors play a role in the development of emphysema?

A I don't know. Other than alpha 1, I don't have -- and I might -- Once again, I know we have talked or at least you have tried to steer me toward emphysema all day, and I want to get back to talking about things like cystic fibrosis and diseases that relate to other chronic lung conditions in the form of COPD, because I just want to say that those diseases can be genetic and can cause chronic obstructive lung disease, and I have to the best of my ability ruled those out historically and through all medical probability in this man. I want to make it very

clear that I do not intend to limit myself to a discussion of only emphysema when I present what chronic obstructive lung disease is in this case.

Q You mentioned that his mother had died of cardiovascular disease. His father apparently was still alive. Did you take any history of what disease processes his father has had over the years?

A His father is still going at age eighty-one and I did not inquire as to any disease process because he was described as hale and hearty at this time, and I assumed whatever they were, they must have been fairly trivial.

Q Okay.

MR. WATKINS: If he is still running that store, J. C. --

Q If you had inquired a little further into the history beyond the parents, say, and had concluded that a couple of aunts in addition to the mother had died of some type of cardiovascular disease, would that change your opinion in any way as to whether this man might have some element of cardiovascular disease contributing to his pulmonary function

abnormalities?

A Definitely not.

Q Okay. Any reason for that?

A Sure. A lot of reasons. Number one is his electrocardiogram shows no evidence whatsoever of any ischemic heart disease in my opinion, and I believe it's been read by other physicians similarly. Number two is his chest x-ray shows the heart to be vertical and small. It is not enlarged nor has any other physician ever suggested it was enlarged. Number three is he has absolutely no history of angina pectoris, has no prior history of myocardial infarction or any other cardiac manifestations of the type which would be seen with atherosclerotic heart disease, which would be the only disease suggested by such a family history as you have put forward. In the absence of clinical symptoms, in the absence of findings, in the absence of EKG and x-ray evidence, I feel that there is absolutely nothing to suggest heart disease in this man and certainly his heart disease would not cause the pulmonary function abnormalities seen at Audie Murphy, at Hermann, at our laboratory, even the studies submitted by

Dr. MacDougall.

Q Okay. If further examination into -- You mentioned he had one other brother with asthma.

A Right.

Q If further examination into his family revealed other relatives of, I guess, a second degree as opposed to first-degree relatives -- First-degree relatives are parents and children. Right?

A I assume.

Q And second-degree relatives are everybody else. Assume that for the moment, because I am not positive, revealed that other relatives besides his parents or his children had had asthma problems, in addition to his brother. Would that affect in any way your opinion with regard to whether this man might have some genetic component of pulmonary disease?

A Let me answer that in two ways. Number one is I would have to know specifically which of these removed relatives you are speaking. For example, if it was his wife's nephew's brother, no. And number two is if there was a family history of asthma, then it might explain to me why this man was more susceptible to the harmful

effects of cigarette smoke and became injured by the cigarettes, because certainly there must be some degree of individual susceptibility. But it certainly, if anything, would help strengthen the position that cigarettes were an injurious factor in this case.

Q We talked a little earlier about whether you were going to -- I mean the types of tests you might run at the beginning of the year, the beginning of 1987. Had you planned to run any tests with regard to his cardiovascular function either right or left-sided?

A No.

Q Okay. It's your opinion, I take it, that you don't need to do that because that's not the cause of his problem, at least left-sided heart problems.

A Well, let me just say I don't think I need to do some of the other tests that we may do but they are not painful and they are not dangerous, and if it is necessary to do that from a medical-legal standpoint, they will be done. I would not subject this man to anything that you might be suggesting at this point in time, whether it helps his lawsuit or not. I don't

care. I think that's going too far.
Q Subjecting him to anything?
A Like cardiac catheterization, and in my opinion there is absolutely no evidence of any cardiac disease in this patient, and I feel so secure in that that I can support that without doing anything further.
Q Okay. You noted earlier in your testimony that one of the things you picked up in reviewing the records was an early history of some type of recurrent kidney problems which were called back then acute nephrotic hemorrhagic nephritis, I guess -- acute hemorrhagic nephritis.
A (Nodding affirmatively.)
Q There are, I believe you would agree, certain kidney problems which can result in pulmonary manifestations.
A That's correct.
Q In your opinion, could any of his pulmonary problems be related to that old recurrent kidney problem?
A The answer is no. And the reason is that, number one, I would have expected the kidney problem to have caused persistent and much greater difficulties at the time and would have

expected the pulmonary symptoms to be accompanying it at the time of the initial kidney problems in all medical probability. Number two is those diseases such as the ones that come to mind would be Goodpasture's syndrome, Wegener's granulomatosis are of such dire illness that the survival rate often is less than a year, and number three is that I am not aware of any renal diseases classified as hemorrhagic nephritis associated with emphysema, bullous emphysema or airway obstruction. Most of them have infiltrates seen in the lung and may cause a restrictive pattern but don't cause these type of pulmonary function tests. And, finally, to the best of my knowledge, he is having no kidney problems at this time but certainly now that I have this knowledge I will recheck his urine because that won't be too painful for him.

Q You mentioned, though you said you were specifically not saying that you thought he had it, but one of the descriptions of the sort of acute exacerbation of a -- I'm sorry. Could we go off the record just one second?

(Discussion off the record.)

Q You mentioned earlier in your testimony, Doctor, that one possible explanation for transient cor pulmonale or right-sided heart failure would be pulmonary embolism or pulmonary emboli which subsequently cleared and that is, I take it, blood clots in the lung from some other source.

A That's correct.

Q Do you believe that this patient has ever had pulmonary emboli?

A No, sir. I may have been unclear in my presentation. I only used that as an example to show that you can have transient right-sided heart failure that would come and go, not come and stay. I believe I also cited at that time a more probable explanation would be either bronchospasm or some other intrinsic pulmonary problem which would be reversible and cause him to go into the right-sided heart failure as manifested by the nine millimeter -- I'm sorry -- nine centimeter elevation of JVP and possible gallop as described at that time. And the embolus was only used as an illustration that you can have increased strain on the right side of the heart which is temporary and does not necessarily last forever.

Q Doctor, in your October 14th, 1986, report, you indicate that the patient denied ever having had whooping cough, diphtheria or other major childhood illnesses. Do you believe that whooping cough or diphtheria or some of the major childhood illness could predispose or cause pulmonary disease in later life?

A In a limited way, yes. In regard to this case, there is evidence that those persons who sustain pediatric pulmonary injury of a significant magnitude are far more sensitive to the later effects of cigarette smoking and are more probable to develop progressive pulmonary dysfunction than are adults who have not had such injury. And that is one of the reasons I obtained the information.

Q Are people who have had repeat pulmonary infections, say, or whooping cough when they were children and who do not smoke more at risk for developing pulmonary disease?

A I believe so.

Q Okay.

A If it was a bad whooping cough, they may have bronchiectasis or some other disease. It's certainly a possibility.

Q Okay. And in your opinion does this patient have any component of bronchiectasis?
A Not that I can see, sir. And on auscultation I don't hear anything that in my opinion is bronchiectasis.
Q All right, sir. What would you hear if it were, if you don't --
A Usually there are a lot of rhonchi and a lot of secretions and mucus production and just a lot of different pulmonary findings that we see here. This man's lungs are relatively silent when you listen to them.
Q All right, sir. Dr. Friedman, do you believe that in light of the x-ray evidence of bullae that you believe are there on his chest films that this patient is more likely to have centrilobular emphysema or panacinar emphysema or do you?
A I don't know.
Q Okay. Are bullae associated with one or the other more strongly than the other, I guess?
A I believe they are more associated with panacinar, I believe.
Q So in the absence of pathology, you wouldn't want to state for certain but would you say that

on a balance it's more likely he has panacinar emphysema?

A I don't know.

MR. McELVEEN: Okay. Can we have just a minute, gentlemen, and we may be about through?

MR. HANKS: Before we get away, just give me the cite, if you can, of that?

MR. McELVEEN: That State of Art article.

MR. HANKS: If there is a note on it.

MR. McELVEEN: Off the record here a second.

(Discussion off the record.)

Q Dr. Friedman, my final very short series of questions regards your fees for testifying and looking at records and so forth. Could I ask you, sir, what you charge for the review of records in a case of this sort?

A $200 an hour for my time.

Q And could you tell us if that is the same rate that you charge for this deposition, for example?

A No.

Q Okay. What would that fee be?

A $400 an hour.
Q Okay. And if you testify at trial in a case of this sort, what would your fee be?
A The same thing, $400 an hour.
Q And do you charge any kind of minimum like for a day's worth of time if you are out of the office part of the day and so forth?
A Yes, I believe we have an -- If it's out of town, it's an eight-hour minimum because we are gone for the whole day.
Q Okay. And when you say an eight-hour minimum, that means that it could be longer than that on a maximum rate.
A Well, if we are gone for more than one day.
Q But it's eight hours a day. It's $3,200 a day basically for out-of-town work.
A Except for today because for the record we started -- We were supposed to start at 9:00 o'clock this morning and it's now 9:00 o'clock roughly at night so it's going to be --
Q I understand for work actually done you charge $400 an hour.
A It's only for work done. That's right.
Q But if you, like, testify in court for six hours or something, you bill the minimum of eight but

that's it.

A That's it.

Q Okay. For out-of-town work, Doctor, when you did the testing, for example, on Mr. Caballero here, I presume that Hermann charged you for the PFT's and the exercise test. Is that correct?

A I honestly don't remember if they charged me or billed it directly to Mr. Watkins, but whatever it was, whenever work is done by an outside lab or facility, we try and have the bill directed straight to the attorney, or if it's sent by another doctor, it goes straight to the patient. We don't like to act as an independent intermediary for anybody else's work.

Q With regard to your own workup on this particular patient, say, the pulmonary function tests that were done down in Corpus Christi, what would your office's charge have been for that workup, say, pulmonary function studies and a further informational history that the doctor took down there?

A It was free.

Q Okay.

A There is no charge.

Q Is that your policy with regard to all your

follow-up patients?

A Yes, we -- When we see a patient in an evaluation for a medical-legal case such as this one, there is a one-time $600 fee which includes the pulmonary function tests and it includes any subsequent follow-up visits. It would not include any of the future studies that need to be done by outside parties such as x-rays. If he goes back to Hermann for a PFT, we will have those bills directed straight to Mr. Watkins. We will neither profit from them nor will we absorb the cost.

Q Okay.

A But the follow-up visit and the -- If a PFT is done in this office or the Corpus office, that's free.

Q Okay. Does the $600 one-time charge include the cost of writing up the, say, report to Mr. Watkins in this case?

A That's right. It's a good deal. That includes -- Just for the record, that includes the history and physical examination, that includes any discussions involved with the attorney in regard to the case. That includes the preparation of the narrative. That includes the pulmonary

function test and that includes any follow-up visits which are necessary for litigation.

Now, if Mr. Caballero comes back for the treatment of an unrelated illness as a private patient or if he came back because he was more short of breath and needed work unrelated to the litigation involved, then he would be treated as a regular patient and I think we only charge $40 for the office visit. Also just for the record, the money received does not go to me but goes to my clinic and is divided with my associates.

Q That's the $600 fee you are speaking of.

A That's correct.

Q Doctor, the chest x-rays that were done on the 14th of October, were they done here in your office?

A They are done in this professional building, but not -- We don't have a unit here in the office.

Q Okay. Who did them?

A I believe that they were done up in Suite 309, which there is an x-ray machine there and a technician takes the x-rays.

Q Does she work for you?

A No.

Q Does she work for a radiology associates outfit here?
A No, I believe she works for an orthopedist up there.
Q Okay. And is that the same thing that happened on February the 10th?
A Yes.
Q The x-rays that were done were done by the orthopedic surgeon's technician. Were those films read by a radiologist?
A No.
Q Were they read to your knowledge by anybody but you?
A No, sir, only myself.
Q Okay. And that includes the 2-10-86 x-rays and the 10-14-86 x-rays.
A To the best of my knowledge, that's correct.
Q Okay. I believe that's it, sir.

MR. McELVEEN: Let me conclude the deposition by saying that the parties have agreed that, if you would, you can turn the x-rays that we have marked as Friedman Deposition Exhibits 7, 8, 9 and 10, which are three PA's and a lateral, along with the other exhibits, over to the court

reporter, who at the joint direction of the parties will send somebody from her office as the chain of custody, as it were, to St. Joseph's Hospital here in Houston for the making of five sets of copies of those x-rays. If the court reporter herself would do it, we would sure appreciate it, because she knows exactly what I am going to be asking her to do, but if the court reporting service would remove the little green dots you have placed on those x-rays for the copying process and replace the dots on the exhibits plus the copies, we would appreciate it and then send the copies as we have indicated off the record here to the various counsel of record along, of course, with a bill for the copying costs and whatever costs you incur in it.

A If I could just clarify for the record --

Q Surely.

A I would like to turn over all x-rays in regard to this action which I have in my possession to the court reporter in case there are any x-rays left in the folder which are not covered as

exhibits in your request, rather than split the x-rays such that I might have two or three films left here. I would rather have all x-rays in one place rather than dividing them in any way, with your permission, and then what the court reporter copies at your direction certainly is your prerogative, but I think it would be beneficial to keep the x-rays together based on my past experiences.

MR. McELVEEN: Well, do you have any problem with that?

MR. WATKINS: I have no problem with that.

MR. McELVEEN: I don't know that we do except, of course, we can go off the record.

(Discussion off the record.)

EXAMINATION

BY MR. WATKINS:

Q Let me ask one very brief question. If Caballero over a very brief period of time and on a very few occasions did some very limited brake work on automobiles, and I can't be more

definitive with reference to the brake work, would that change your views with reference to what in your opinion is going on in his lungs?

A It would change my opinion only to the standpoint that brake work does have asbestos and there is known to be significant exposures to asbestos, although usually this is when it is done over a prolonged period of time for many years. However, it is possible that could be contributing to the fibrosis in the lower lung zones. I do not believe it is a significant contributing factor to his overall picture that we see today.

MR. WATKINS: All right. That's all I have.

MR. TOWNSLEY: Let me just ask one just to kind of conclude.

EXAMINATION

BY MR. TOWNSLEY:

Q Have you made a diagnosis of Mr. Caballero's condition?

A I have.

Q What is that diagnosis?

A It's my opinion that Mr. Caballero suffers from chronic obstructive lung disease or chronic obstructive pulmonary disease which represents probably a combination of small airway obstruction or small airway bronchitis and emphysema.

FURTHER EXAMINATION

BY MR. McELVEEN:

Q In following up on that very quickly, do you believe that Mr. Caballero has any restrictive lung disease secondary to pulmonary fibrosis?

A I believe that it is possible, although we do not see any documentation of it either on pulmonary function testing or on auscultation of the chest, in that I don't hear any rales. Certainly the x-ray would suggest there may be some fibrosis there which could be adding an element of obstruction. Also I did not add this on the response to Mr. Townsley's question, but I believe that cigarette smoking has certainly been a primary contributing factor in the etiology of his illness.

MR. McELVEEN: Do you put on the end

of this that he has a right to read and sign it or have we already taken care of that?

MR. WATKINS: I think we took care of that, and we will give you the right to read. It will take you another day.

(Friedman Exhibit No. 6 was marked for identification by the reporter.)

_____

DR. GARY K. FRIEDMAN

THE STATE OF TEXAS :

COUNTY OF HARRIS :

Subscribed and sworn to before me, the undersigned authority, by the witness, DR. GARY K. FRIEDMAN, on this, the _____ day of _____, 19__.

_____

Notary Public in and for Harris County, T E X A S

My Commission Expires:

THE STATE OF TEXAS :

COUNTY OF HARRIS :

I, Cynthia A. Rogers, a Certified Shorthand Reporter and Notary Public in and for Harris County, Texas, certify that the caption to this deposition correctly states the facts set forth therein; that the examination of the witness named in said caption was correctly reported in shorthand by me at the time and place and under the agreement set forth in said caption and has been transcribed from shorthand into typewriting under my dictation and supervision in the foregoing transcript.

I further certify that charges for the preparation of the foregoing completed deposition are $_____ for the original transcript, charged to Attorney for Defendant Philip Morris Incorporated.

Given under my hand and seal of office, on this, the 8th day of December, 1986.

Cynthia Rogers

CYNTHIA A. ROGERS, CSR, RPR
Notary Public in and for
Harris County, T E X A S

My Commission Expires: 6-28-88
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